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College of Arts and Sciences

The Case Western Reserve University College of Arts and Sciences (http://artsci.case.edu) combines a history of educational excellence with a commitment to innovation and discovery. Building on a 190-year-old tradition, the college traces its origins to several predecessor institutions, including Adelbert College, Flora Stone Mather College, Cleveland College, Western Reserve College, and the Case Institute of Technology.

Today, the college offers educational and research programs in the arts and humanities, mathematics and natural sciences, and social sciences. It comprises 21 academic departments and 34 interdisciplinary programs and centers.

Brief History

Western Reserve College, the earliest of our predecessor institutions, was founded in 1826 in Hudson, Ohio, about 26 miles southwest of Cleveland. In 1882 the college moved to Cleveland, where it formed the basis for Western Reserve University. The institution expanded to include several professional and graduate schools in addition to its liberal arts programs. It also served as a magnet for other artistic, cultural, educational, medical, and scientific organizations, now its neighbors in the extraordinary setting known as University Circle.

Central to the heritage of the college are the traditions of the programs that preceded it: Adelbert College, as the men’s undergraduate unit of Western Reserve University was known after the move to Cleveland; Flora Stone Mather College, initially founded in 1888 as the College for Women; and Cleveland College, founded in 1925 in downtown Cleveland to serve part-time and adult students. These three units, each with a distinguished history of scholarship and achievement, were brought together in 1972 under the revived name of Western Reserve College. The college took its present form in 1992, when undergraduate and graduate programs and research in the arts, humanities, and social sciences were united with those in the physical sciences to form the College of Arts and Sciences.

Since the early 19th century, the college and its predecessors have participated in important developments in higher education. Examples include:

Engagement in issues of social justice. Western Reserve College’s early years in Hudson saw debates between two groups, each opposing slavery. Colonizationists believed that liberated slaves should be resettled in Africa; abolitionists did not favor such a policy. After long and bitter conflict, supporters of the abolitionist movement carried the day.

Emergence of science. The college in Hudson was home to early and distinguished programs in astronomy and mathematics. Later, in 1887, Professor Edward Morley collaborated with Professor Albert Michelson of the Case School of Applied Science in a series of experiments that remain among the most significant in the history of physics.

Education of women. In the 1850s, the college’s Cleveland-based Department of Medicine awarded six of the first seven medical degrees granted to women in this country. The founding of the College for Women in 1888 was only the second instance of a separate “coordinate” college for women at a major university.

Demographic and technological change. Following World War II, enrollment in Cleveland College swelled with returning veterans. During this period, the introduction of new technologies and fields of study drove increasing demand for advanced education and research in a wide range of disciplines.

Undergraduate Programs

Undergraduates in the college can choose a major or minor from almost 60 programs, design their own courses of study, or enroll in integrated bachelor’s/master’s degree programs. The university offers great flexibility to students wishing to pursue double majors in disparate fields, such as physics and studio art. In addition, students from all fields are eligible to participate in the college’s vibrant performing arts programs, including music and dance ensembles.

Beyond their course work, students are encouraged to conduct independent research within the college, in other units of the university, or in the scientific and cultural institutions of University Circle. They also have opportunities to engage in service learning projects and internships in research institutions, businesses, cultural institutions, and governmental agencies. With funding from the college’s Experiential Learning Fellowship programs, undergraduates may design and carry out ambitious research projects in Cleveland or across the globe.

Graduate Programs

The college’s graduate offerings include doctoral programs in 19 fields and several distinctive master’s programs. Through a partnership with the Cleveland Play House, the Department of Theater has created one of the nation’s preeminent Master of Fine Arts programs in acting (http://theater.case.edu/graduate/master-of-fine-arts-in-acting). The Science and Technology Entrepreneurship Program (STEP) (http://step.case.edu) offers a three- or four-semester sequence of courses leading to a Master of Science degree in biotechnology, chemistry, or physics.

Centers in the College of Arts and Sciences

Baker-Nord Center for the Humanities

Established in 1996 with a generous endowment gift from Eric and Jane Nord, the Baker-Nord Center (http://humanities.case.edu) is dedicated to: 1) highlighting and celebrating the arts and humanities at Case Western Reserve University (art history and art, classics, English, history, modern languages and literatures, music, philosophy, religious studies, theater, and dance) through public lectures, panels, performances, and special programs; 2) supporting research and creative work in the humanities and arts through fellowships, grants, and symposia, as well as encouraging new and innovative directions in research and creativity, including the digital humanities, through public forums and open discussion; and 3) facilitating cross-disciplinary and inter-disciplinary collaborations among Case Western Reserve University faculty and members of other University Circle institutions that address questions and problems of broad human interest, within and outside of the academy.

Center for Education and Research in Cosmology and Astrophysics

The Center for Education and Research in Cosmology and Astrophysics (http://www.case.edu/origins/sciences/cosmology.html) (CERCA) is a center for the advancement and promotion of the scientific understanding of the origin and evolution of the universe and its contents, and their
connection to fundamental physics. CERCA connects scientists and educators in the Departments of Physics and Astronomy and at the Shafran Planetarium of the Cleveland Museum of Natural History (CMNH). It draws together theoretical and experimental physicists and astrophysicists with observational astronomers to explore the cosmos and, together with partner educators, to communicate their excitement and knowledge to students and to the world at large. CERCA is also a partner in the Institute for the Science of Origins, a partnership of Case Western Reserve, CMNH, and ideastream to advance and promote knowledge in a wide range of origins sciences.

**Center for Policy Studies**
The Center for Policy Studies (http://policy.case.edu) has four objectives: 1) to make Case Western Reserve University a more attractive and rewarding institution for students and faculty who wish to learn about and engage in the creation of public policy; 2) to raise the public profile of the university by sponsoring programs and other activities that publicize and increase the reach of the work of CWRU's policy analysts and their guests; 3) to contribute to the wider community by disseminating information and analysis of policy issues as generated both by faculty and by guests we bring to campus; and 4) to encourage creation of a community of policy studies on campus that may serve in the future as the basis for further development of policy-oriented curriculum at both the undergraduate and graduate levels.

**Center for Research on Tibet**
The Center for Research on Tibet (http://www.case.edu/affil/tibet) at Case Western Reserve University was founded in 1987 and is administered within the Department of Anthropology. The center's goal is to conceptualize and conduct research on Tibetan history, society, language, ecology/physiology, and culture so as to understand traditional Tibet and the manner in which it has changed.

**Leonard Gelfand STEM Center**
The Leonard Gelfand STEM Center (http://www.case.edu/artsci/csm) links the resources of the College of Arts and Sciences - including faculty, staff, and students - with needs in the K-12 STEM community. Its collaborations with external partners, including schools and public libraries, park systems, and science museums, enhance instruction and generate student interest in the STEM fields of science, technology, engineering, and mathematics. The center hosts the annual Northeast Ohio Regional Science Olympiad, conducts a summer Shipwreck Camp that includes lessons in meteorology and marine geology, and engages middle school students in biological fieldwork in its Environmental Heroes Program. Through the Gelfand Science and Engineering Fair Program, it provides support for science fairs in Northeast Ohio schools, and it recruits and trains undergraduates to assist younger students with their science fair projects. In addition, the center participates in the university's Robert Noyce Teacher Scholarship Program, which provides mentoring and other support for future math and science teachers.

**Center for the Study of Writing**
The Center for the Study of Writing (http://www.case.edu/writing/csw) (CSW) is a flexible, cross-disciplinary center that fosters connections between innovative writing research and sound pedagogical practices, and between specialized faculty expertise and the needs and interests of aspiring undergraduate and graduate students.

**Dittrick Medical History Center**
The Dittrick Medical History Center (http://www.case.edu/artsci/dittrick/museum) is comprised of the Dittrick museum, archives, and collections of rare books, artifacts, and images. The center originated as part of the Cleveland Medical Library Association (est. 1894) and today functions as an interdisciplinary study center within the College of Arts and Sciences.

**Ernest B. Yeager Center for Electrochemical Sciences**
The mission of the Ernest B. Yeager Center for Electrochemical Sciences (http://www.case.edu/artsci/chem/yces) (YCES) is: 1) to enhance the education and training of students in fundamental and applied aspects of electrochemistry; 2) to provide a national and international resource for the dissemination of electrochemical knowledge within industrial, laboratory, and academic communities and to the general public and to support the continuing education of professional electrochemists; (3) to promote interactions between electrochemists and their research colleagues through seminars and symposia; and 4) to foster the improvement of the environment and human welfare through research in the design of materials and the development of processes and devices that will positively influence fields from medicine and microelectronics to energy conversion and energy storage.

**Schubert Center for Child Studies**
The Schubert Center for Child Studies (http://schubertcenter.case.edu/home.aspx) aims to strengthen links between child-related academic study, public policy formation, and professional practice. The Schubert Center convenes experts from across campus and throughout the Cleveland community to provide an innovative forum for multidisciplinary education, research, and communications focused on child policy.

**Skeletal Research Center**
The mission of the Skeletal Research Center (http://www.case.edu/artsci/biol/skeletal) (SRC) is to facilitate the advancement of basic research and to accelerate the translation of this new information into innovative clinical strategies for the regeneration and maintenance of skeletal tissues. Based in the Department of Biology, the center provides an organizational umbrella for the creative and innovative interactions of faculty. Although members of our faculty have long been recognized as leaders in skeletal research, the center was established in 1986 to draw these individuals together into a multidisciplinary group which could jointly approach current basic research and clinical problems. SRC is an administrative entity under the dean of the College of Arts and Sciences and the dean of the School of Medicine.

**Administration**

*Cyrus C. Taylor, PhD*
(Massachusetts Institute of Technology)
*Dean and Albert A. Michelson Professor in Physics*

*Molly W. Berger, PhD*
(Case Western Reserve University)
*Associate Dean*

*Stephen E. Haynesworth, PhD*
(Case Western Reserve University)
*Associate Dean*

*Jill E. Korbin, PhD*
(University of California, Los Angeles)
*Associate Dean*
American Studies Program

The American Studies Program is designed to give students the flexibility to cross traditional intellectual boundaries in order to develop perspectives on American life that are more expansive and critical than those normally found within the limits of a single discipline. The interdisciplinary approach makes available a wide variety of materials, methods, theories, and themes to use as tools to investigate the complexities of the American past and present. The process of investigation is as important as the outcome, for it teaches students to analyze with breadth as well as depth, to think creatively as well as critically.

Undergraduate Programs

Major

Required courses (30 credit hours):

Required Courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMST 117</td>
<td>Exploring American History Through Biography</td>
<td>3</td>
</tr>
<tr>
<td>HSTY 112</td>
<td>Introduction to American History</td>
<td>3</td>
</tr>
<tr>
<td>AMST 390</td>
<td>Independent Study</td>
<td>1 - 3</td>
</tr>
</tbody>
</table>

One of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTH 270</td>
<td>American Art and Culture Before 1900</td>
<td>3</td>
</tr>
<tr>
<td>HSTY 361</td>
<td>Crime and Culture in Early America</td>
<td></td>
</tr>
<tr>
<td>HSTY 381</td>
<td>City as Classroom</td>
<td></td>
</tr>
<tr>
<td>SOCI 349</td>
<td>Social Inequality</td>
<td></td>
</tr>
</tbody>
</table>

Elective Courses 18

Total Units 28-30

Elective Courses (18 credit hours):

Students are to choose six electives, in two areas of concentration. An area of concentration consists of either 1) courses in a single department, or 2) courses from more than one department focusing on a theme or issue such as technology and culture, urban studies, literature and society, etc.

Minor

A minor consists of five courses: the introductory class and four electives that focus on a significant period, problem area, or aspect of American civilization. The rationale for selecting such a minor program, and its relation to the student's career or intellectual interests, must be discussed with and approved by the minor advisor.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMST 117</td>
<td>Exploring American History Through Biography</td>
<td>3</td>
</tr>
<tr>
<td>Four additional courses selected in consultation with the program director</td>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>

Total Units 15

Program Faculty

Renée M. Sentilles, PhD
Associate Professor, Department of History; Director, American Studies Program

Courses

AMST 117. Exploring American History Through Biography. 3 Units.
This discussion and lecture class uses various forms of biography to explore issues of American identity throughout the course of American history. The class will discuss how certain biographies have created archetypal American identities, and how issues such as race, class, gender, sexuality, religion, and historical context have shaped the writing, reading and purpose of biography. The last third of the class will consider the process of "national memory," the way the United States has decide to remember its past. Here the "biography" is collective, and created by myriad strands of mass culture woven together to create a national mythology. We will explore the works of those striving to pull apart these different strands, and explore what these memories tell us about established national identity. Students will explore biographical process through their assignments, and consider such questions as: How do American biographies influence our understanding of what it means to be American? How does biographical medium affect the message? Can we accept biography as history? This course investigates biography as a constructed genre that comes in a variety of forms, including autobiography, biographical novels, oral histories, and film. Offered as AMST 117 and HSTY 117.

AMST 270. American Art and Culture Before 1900. 3 Units.
Survey of the development of American art from colonial times to the present which explores how art has expressed both American values and American anxieties. Painting is emphasized, but the course also considers architecture, the decorative arts, film, literature, and music. Offered as AMST 270 and ARTH 270.

AMST 271. American Art and Culture: The Twentieth Century. 3 Units.
Survey of the development of American art from 1900 to the present (and the future) which will explore how art has expressed both American values and American anxieties. Painting will be emphasized, but the course will also consider architecture, the decorative arts, film, literature, and music. Offered as AMST 271 and ARTH 271.

AMST 327. American Theater and Playwrights. 3 Units.
Designed to provide students an overview of the development of theater in the United States and to familiarize them with the work and themes of selected American playwrights. Offered as AMST 327 and THTR 327.

AMST 390. Independent Study. 1 - 3 Unit.
Department of Anthropology

Anthropology, with its broad comparative approach, is in a strategic position to contribute to the identification and resolution of many of the problems, both local and global, that challenge society today. The Department of Anthropology offers programs leading to both undergraduate (Bachelor of Arts) and graduate (Master of Arts, Doctor of Philosophy) degrees. In addition, the department offers joint graduate degree programs with Case Western Reserve University School of Medicine (MA or PhD/MPH and MA or PhD/MD). Students graduating with a BA in anthropology (http://www.case.edu/artsci/anth) normally must continue for the MA or PhD degree if they are interested in working as anthropologists.

General Anthropology (p. 5) | Medical Anthropology (p. 5) | Physical Anthropology (p. 6) | Archaeology (p. 6) | Minors (p. 6)

Undergraduate Programs

Majors

The undergraduate major requires a minimum of 30 semester hours in anthropology. The undergraduate program provides a cross-cultural perspective on human behavior, culture, and biology. Students may choose from four major concentrations.

1. The General Anthropology Concentration provides training in three subdisciplines of anthropology. The first, sociocultural anthropology, emphasizes relationships among socioeconomic institutions, cultural ecology, health and medicine, religion and symbolism, individual psychological variables, and language. The second, physical anthropology, emphasizes human ecology and adaptability, human growth and development, nutritional adaptation, epidemiology, and human and nonhuman primate evolution. The third, archaeology, deals with the long sequences of independent sociocultural, technological, and ecological evolution that have taken place under diverse conditions.

2. The Medical Anthropology Concentration provides training in the three subdisciplines discussed above, but with a focus on their relationship to physical and mental health, illness, disease, and medicine.

3. The Physical Anthropology Concentration deals with the biological nature of humans past and present. Physical anthropologists look beyond purely biological phenomena to understand how biology, behavior, and environment interact. Most course work is in the subdiscipline of human biology, which seeks to understand those interactions by studying physiology, genetics, nutrition, and epidemiology in modern human populations throughout the world. The concentration also provides training in paleoanthropology, which documents the biological history of humans and, in conjunction with archaeology, analyzes those interactions for past humans.

4. The Archaeology Concentration focuses on the customs and daily life of people who lived in the past. Anthropologists excavate and analyze the material remains of the sites of human occupation. At the same time, archaeological research seeks to understand the evolution of culture and society by determining how and why changes in human society have occurred.

General Anthropology Concentration

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 102</td>
<td>Being Human: An Introduction to Social and Cultural Anthropology</td>
<td>3</td>
</tr>
</tbody>
</table>

Medical Anthropology Concentration

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 103</td>
<td>Introduction to Human Evolution</td>
</tr>
</tbody>
</table>

Geographic area course, such as:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 312</td>
<td>Ethnography of Southeast Asia</td>
</tr>
</tbody>
</table>

Approved anthropology electives 18

Total Units 30
**Anthropology of Body Image**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 387</td>
<td>Anthropology of Body Image</td>
<td>6</td>
</tr>
</tbody>
</table>

Approved anthropology electives 6

**Total Units** 30

### Physical Anthropology Concentration

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 102</td>
<td>Being Human: An Introduction to Social and Cultural Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 103</td>
<td>Introduction to Human Evolution</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 319</td>
<td>Introduction to Statistical Analysis in the Social Sciences</td>
<td>3</td>
</tr>
</tbody>
</table>

Geographic area course, such as:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 312</td>
<td>Ethnography of Southeast Asia</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 314</td>
<td>Cultures of the United States</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 331</td>
<td>The Most Ancient Near East</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 333</td>
<td>Roots of Ancient India: Archaeology of South Asia</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 349</td>
<td>Cultures of Latin America</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 353</td>
<td>Chinese Culture and Society</td>
<td>3</td>
</tr>
</tbody>
</table>

Three physical anthropology courses, such as: 9

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 302</td>
<td>Darwinian Medicine</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 367</td>
<td>Topics in Evolutionary Biology</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 370</td>
<td>Field Seminar in Paleoanthropology</td>
<td>3</td>
</tr>
<tr>
<td>ANTH/ANAT 375</td>
<td>Human Evolution: The Fossil Evidence</td>
<td>3</td>
</tr>
<tr>
<td>ANTH/ANAT 377</td>
<td>Human Osteology</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 378</td>
<td>Reproductive Health: An Evolutionary Perspective</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 394</td>
<td>Seminar in Evolutionary Biology</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 396</td>
<td>Undergraduate Research in Evolutionary Biology</td>
<td>3</td>
</tr>
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</table>

Approved anthropology electives 9

**Total Units** 30

### Archaeology Concentration

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 102</td>
<td>Being Human: An Introduction to Social and Cultural Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 103</td>
<td>Introduction to Human Evolution</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 107</td>
<td>Archaeology: An Introduction</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 319</td>
<td>Introduction to Statistical Analysis in the Social Sciences</td>
<td>3</td>
</tr>
</tbody>
</table>

Geographical area course, such as:

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Units</th>
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<tbody>
<tr>
<td>ANTH 312</td>
<td>Ethnography of Southeast Asia</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 314</td>
<td>Cultures of the United States</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 331</td>
<td>The Most Ancient Near East</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 333</td>
<td>Roots of Ancient India: Archaeology of South Asia</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 349</td>
<td>Cultures of Latin America</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 353</td>
<td>Chinese Culture and Society</td>
<td>3</td>
</tr>
</tbody>
</table>

Three approved archaeology courses, such as: 9

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 202</td>
<td>Archaeology of Eastern North America</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 321</td>
<td>Methods in Archaeology</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 324</td>
<td>Field Methods in Archaeology</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 330</td>
<td>Special Topics in Prehistory</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 331</td>
<td>The Most Ancient Near East</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 333</td>
<td>Roots of Ancient India: Archaeology of South Asia</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 399</td>
<td>Independent Study (if approved by advisor)</td>
<td>3</td>
</tr>
</tbody>
</table>

Approved electives 6

**Total Units** 15

### Departmental Honors

This program is open to qualified majors in anthropology who have completed 15 hours of anthropology with a 3.25 GPA and who have an overall 3.0 GPA. Students should apply for the program in the fall semester of their junior year and, if approved, register for ANTH 391 Honors Tutorial and ANTH 392 Honors Tutorial in the spring of their junior year and the fall of their senior year.

Honors students are required to undertake a research project under the supervision of one or more faculty members and to present an acceptable research paper in the fall semester of their senior year. Students interested in the program should contact one of the department’s undergraduate advisors.

### Integrated Graduate Studies

The Department of Anthropology participates in the Integrated Graduate Studies Program ([http://bulletin.case.edu/undergraduatestudies/gradprofessional/#accerlerationtowardgraduatedegreestext](http://bulletin.case.edu/undergraduatestudies/gradprofessional/#accerlerationtowardgraduatedegreestext)). Interested students can find the general requirements and the admission procedures for the program in the Undergraduate Studies section of this bulletin and may consult the department for further information.

### Minors

The department offers four minor emphases in anthropology: general anthropology, medical anthropology, archaeology, and physical anthropology. All require a minimum of 15 semester hours in anthropology.

#### General Anthropology Minor

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 102</td>
<td>Being Human: An Introduction to Social and Cultural Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 103</td>
<td>Introduction to Human Evolution</td>
<td>3</td>
</tr>
</tbody>
</table>

One geographic area course, such as:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 312</td>
<td>Ethnography of Southeast Asia</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 314</td>
<td>Cultures of the United States</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 331</td>
<td>The Most Ancient Near East</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 333</td>
<td>Roots of Ancient India: Archaeology of South Asia</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 349</td>
<td>Cultures of Latin America</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 353</td>
<td>Chinese Culture and Society</td>
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</tr>
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</table>

Approved electives 6

**Total Units** 15

#### Medical Anthropology Minor

<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>ANTH 102</td>
<td>Being Human: An Introduction to Social and Cultural Anthropology</td>
<td>3</td>
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<tr>
<td>ANTH 103</td>
<td>Introduction to Human Evolution</td>
<td>3</td>
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<tr>
<td>ANTH 215</td>
<td>Health, Culture, and Disease: An Introduction to Medical Anthropology</td>
<td>3</td>
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One geographic area course, such as:

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</tr>
<tr>
<td>ANTH 314</td>
<td>Cultures of the United States</td>
<td>3</td>
</tr>
</tbody>
</table>
One geographical area course, such as:

- ANTH 107  
- ANTH 103  
- ANTH 312

Total Units: 3

One health-related topics course, such as:

- ANTH 302  Darwinian Medicine  
- ANTH 306  The Anthropology of Childhood and the Family  
- ANTH 311  Anthropology of Obesity  
- ANTH 316  Current Global Health Events  
- ANTH 313  The Anthropology of Adolescence  
- ANTH 323  AIDS: Epidemiology, Biology, and Culture  
- ANTH 326  Power, Illness, and Inequality: The Political Economy of Health  
- ANTH 335  Illegal Drugs and Society  
- ANTH 338  Maternal Health: Anthropological Perspectives on Reproductive Practices and Health Policy  
- ANTH 351  Topics in International Health  
- ANTH 352  Urban Health  
- ANTH 359  Introduction to International Health  
- ANTH 365  Gender and Sex Differences: Cross-cultural Perspective  
- ANTH 371  Culture, Behavior, and Person: Psychological Anthropology  
- ANTH 376  Topics in the Anthropology of Health and Medicine  
- ANTH 387  Anthropology of Body Image

Total Units: 15

Physical Anthropology Minor

- ANTH 102  Being Human: An Introduction to Social and Cultural Anthropology  
- ANTH 103  Introduction to Human Evolution

One geographical area course, such as:

- ANTH 312  Ethnography of Southeast Asia  
- ANTH 314  Cultures of the United States  
- ANTH 331  The Most Ancient Near East  
- ANTH 333  Roots of Ancient India: Archaeology of South Asia  
- ANTH 335  Chinese Culture and Society

Two approved physical anthropology electives, such as:

- ANTH 302  Darwinian Medicine  
- ANTH 306  The Anthropology of Childhood and the Family  
- ANTH 311  Anthropology of Obesity  
- ANTH 316  Current Global Health Events  
- ANTH 313  The Anthropology of Adolescence  
- ANTH 323  AIDS: Epidemiology, Biology, and Culture  
- ANTH 326  Power, Illness, and Inequality: The Political Economy of Health  
- ANTH 335  Illegal Drugs and Society  
- ANTH 338  Maternal Health: Anthropological Perspectives on Reproductive Practices and Health Policy  
- ANTH 351  Topics in International Health  
- ANTH 352  Urban Health  
- ANTH 359  Introduction to International Health  
- ANTH 365  Gender and Sex Differences: Cross-cultural Perspective  
- ANTH 371  Culture, Behavior, and Person: Psychological Anthropology  
- ANTH 376  Topics in the Anthropology of Health and Medicine  
- ANTH 387  Anthropology of Body Image

Total Units: 15

Archaeology Minor

- ANTH 102  Being Human: An Introduction to Social and Cultural Anthropology  
- ANTH 103  Introduction to Human Evolution  
- ANTH 107  Archaeology: An Introduction  
- ANTH 312  Ethnography of Southeast Asia

One geographical area course, such as:

- ANTH 302  Darwinian Medicine  
- ANTH 306  The Anthropology of Childhood and the Family  
- ANTH 311  Anthropology of Obesity  
- ANTH 316  Current Global Health Events  
- ANTH 313  The Anthropology of Adolescence  
- ANTH 323  AIDS: Epidemiology, Biology, and Culture  
- ANTH 326  Power, Illness, and Inequality: The Political Economy of Health  
- ANTH 335  Illegal Drugs and Society  
- ANTH 338  Maternal Health: Anthropological Perspectives on Reproductive Practices and Health Policy  
- ANTH 351  Topics in International Health  
- ANTH 352  Urban Health  
- ANTH 359  Introduction to International Health  
- ANTH 365  Gender and Sex Differences: Cross-cultural Perspective  
- ANTH 371  Culture, Behavior, and Person: Psychological Anthropology  
- ANTH 376  Topics in the Anthropology of Health and Medicine  
- ANTH 387  Anthropology of Body Image

Total Units: 15

Medical Anthropology and Global Health (p. 8) | Cross-Cultural Aging (p. 8) | Joint-Degree Programs (p. 8)

Graduate Programs

The Department of Anthropology offers graduate programs leading to the Master of Arts and Doctor of Philosophy degrees in anthropology with specializations in medical anthropology and global health, cross-cultural aging, and other areas.

The department also offers these combined degrees with the School of Medicine:

- MA or PhD/MPH
- MA or PhD/MD

Master of Arts

The main purpose of the Master of Arts degree program is to prepare students to begin teaching, research, or service careers with a solid background in anthropology. Undergraduate course work in anthropology, while helpful, is not a prerequisite for admission.

Requirements for the master’s degree include credit hour requirements, core course requirements, and a six-hour comprehensive written Master of Arts examination. A candidate for the master’s degree is required to complete 27 hours of class work, including an approved statistics course (3 hours) in which the student has earned a grade of C or better. No more than 6 credit hours of electives may be taken in 300-level courses (advanced undergraduate courses). All master’s degree candidates are required to attain a minimum cumulative grade point average of 3.0 in the core courses (described below) in order to qualify for the degree.

All master’s degree candidates are required to take a six-hour comprehensive written examination in their field set by the department’s examination committee. This examination must be taken before the completion of 27 semester hours of graduate work. Written master’s degree examinations can receive one of three grades: High Pass, Pass, or Fail. “High Pass” signifies performance sufficient for both the Master of Arts degree and advancement to the Doctor of Philosophy program, provided other requirements have also been satisfied. “Pass” signifies performance adequate for the master’s degree but insufficient to enter the doctoral program. “Fail” means a performance inadequate for the master’s degree. In the case of grades of Pass and Fail, the written examination may be retaken once.
Doctor of Philosophy

The Doctor of Philosophy degree program includes specializations in medical anthropology and global health, cross-cultural aging, and sociocultural anthropology. It requires a minimum of 36 credit hours.

PhD students will work with their doctoral advisor and faculty committee to determine prior to completing candidacy exams what foreign language, if any, is needed to successfully complete the PhD. If language competency is required, the language requirement can be met by a demonstration of competency either in a relevant written language or in an oral field language. The advisor, in consultation with the committee, will determine the level of competency needed and by what means language proficiency will be certified. Certification of competency must occur prior to the dissertation defense.

Medical Anthropology and Global Health Program

The objective of the Medical Anthropology and Global Health Program is to train medical anthropologists, physicians, nurses, and other health professionals (1) to recognize and deal with, on both theoretical and practical levels, the complex relations between the biological, social, cultural, psychological, economic, and techno-environmental determinants and concomitants of sickness and health in both local and global settings; and (2) to analyze and evaluate how health services are organized and delivered.

Within the Medical Anthropology and Global Health Program, students may choose to specialize in medical anthropology, cross-cultural aging, international health, urban health, or psychological anthropology.

MA Requirements

The curriculum covers the range of medical anthropology interests: ethnomedicine, international health, urban health, psychiatric anthropology, human adaptation and disease, nutrition, social demography, and so on. All Master of Arts degree students in medical anthropology must complete 27 hours:

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Units</th>
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<tbody>
<tr>
<td>ANTH 439</td>
<td>Ethnographic and Qualitative Research Methods</td>
<td>3</td>
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<tr>
<td>ANTH 462</td>
<td>Contemporary Theory in Anthropology</td>
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<tr>
<td>ANTH 480</td>
<td>Medical Anthropology and Global Health I</td>
<td>3</td>
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<tr>
<td>ANTH 481</td>
<td>Medical Anthropology and Global Health II</td>
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<tr>
<td>Approved anthropology electives</td>
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</table>

Total Units 27

- Anthropology or other department offerings with advisor approval.

PhD Requirements

All PhD students in medical anthropology are required to complete the PhD requirements. Students develop a specific plan of study, requiring a minimum of 36 credit hours, in consultation with their advisor.

- Students must take an approved statistics course (3 credits) and earn a grade of C or better if this requirement has not been fulfilled at the MA level.
- Students must take ANTH 504 Anthropological Research Design
- Students must complete two approved seminars (500 level). ANTH 504 and ANTH 599 do not count towards this requirement.
- Students may not take more than six total credit hours of ANTH 599 Tutorial: Advanced Studies in Anthropology.
- Students must take 18 credit hours in dissertation (ANTH 701 Dissertation Ph.D.).

After completing course requirements, a student must take the written Doctor of Philosophy candidacy examination. This examination consists of two topical exams and a dissertation prospectus. The examination is designed and evaluated by the doctoral committee.

Specializations in Medical Anthropology and Global Health

International Health

The international health specialization offers students training in international health research as well as in evaluation of international health projects. The curriculum includes course work in medical anthropology, epidemiology, and special topics in international health, such as maternal and child health. Students are qualified to work in international health research, in academic positions, or in administrative positions in governmental or private agencies.

Urban Health

The urban health specialization prepares students for careers in anthropology, public health, or allied fields, with a special focus on racial and ethnic disparities in health and on underserved populations in urban areas around the world. Under the guidance of faculty with research experience both domestically and internationally, students will learn anthropological theory and methods focusing on health and illness among urban populations.

Psychological Anthropology

The psychological anthropology specialization prepares students for positions in teaching and research institutions. It is also relevant for mental health professionals concerned with research and theoretical issues related to multiethnic patient populations.

Cross-Cultural Aging

The cross-cultural aging specialization focuses on the processes of aging and the circumstances of older people throughout the world. Particular attention is given to the impact of social, cultural, economic, political, and demographic variables on the experience of aging.

All MA students in the cross-cultural aging specialization must complete 27 credit hours, including the medical anthropology core courses, an approved statistics course, and 12 credit hours of electives approved by the advisor. At the PhD level, students specializing in cross-cultural aging must develop a program with their advisor to meet all PhD requirements.

Other Specializations

Students interested in a graduate degree in social-cultural anthropology should contact the department about requirements.

Joint-Degree Programs

MA or PhD/MPH Program with the School of Medicine

The joint MA or PhD/MPH program provides students with the opportunity to receive an anthropology graduate degree and a public health degree simultaneously. A combined public health/anthropology degree will be especially valuable to students interested in working in urban health or
international health, or within health policy programs. The joint MA/MPH requires 54 credit hours (21 in anthropology and 33 in public health). The joint PhD/MPH requires an additional 18 credit hours in anthropology beyond the MA level and 18 hours of ANTH 701 Dissertation Ph.D., for a total of 90 credit hours. All joint-degree students will develop a program of study with their advisors in both anthropology and public health.

MA or PhD/MD Program with the School of Medicine

The objectives of the joint MA or PhD/MD program are to train unusually qualified students to conduct research on a broad range of bio-cultural problems, with emphasis on the relationship between medicine, ecology, subsistence variables, population dynamics, and disease epidemiology; and to identify and analyze sociocultural impediments to the successful introduction of effective functioning and evaluation of health care programs in diverse contexts. Applicants should make separate application for admission to the School of Medicine and the Department of Anthropology (through the School of Graduate Studies). Applications to the Department of Anthropology may include MCAT scores rather than GRE scores, in addition to other information indicated on the graduate school forms.

Department Faculty

Lawrence P. Greksa, PhD  
(Pennsylvania State University)  
Professor and Chair  
Physical anthropology; human biology; growth and development; nutrition; demography; modernization; Polynesia; Andes; Old Order Amish

Katia M. Almeida-Tracy, PhD  
(Federal University of Rio Janeiro)  
Instructor  
Cultural and social anthropology; cultures of Latin America and Brazil; globalization and socio-economic development, visual anthropology, ethnoart, museums, and patrimony; contemporary youth cultures; Amazonian ethnology; anthropology and education

Eileen Anderson-Fye, EdD  
(Harvard University)  
Robson Associate Professor; Adjunct Assistant Professor of Psychiatry, Case School of Medicine  
Psychological and medical anthropology; culture, gender, and human development; anthropology of adolescence; globalization; immigration; mental health; eating and body image disorders; obesity and obesity stigma; child abuse and trauma; adolescent psychiatric medication usage; person-centered ethnography; mixed methods; Belize; multi-sited ethnography; (Latin America, Caribbean, Asia)

Cynthia Beall, PhD  
(Pennsylvania State University)  
Distinguished University Professor and Sarah Idell Pyle Professor of Anthropology; Co-Director, Center for Research on Tibet  
Physical anthropology: adaptation to high-altitude hypoxia on the Andean, Tibetan, and East African plateau, evolutionary human biology, evolutionary medicine

Atwood D. Gaines, PhD, MPH  
(University of California, Berkeley; University of California, Berkeley, School of Public Health)  
Professor; Professor of Psychiatry and Professor of Bioethics, Case School of Medicine; Professor of Nursing, Frances Payne Bolton School of Nursing  
Medical and psychiatric anthropology; cultural studies of science and medicine; cultural bioethics; religion; aging and dementia; social identity and health; United States; France and the Mediterranean

Melvyn C. Goldstein, PhD  
(University of Washington)  
John Reynolds Harkness Professor; Co-Director, Center for Research on Tibet; Professor of International Health, School of Medicine  
Social and cultural anthropology; development/population anthropology; cross-cultural and global aging; cultural ecology, ethnicity, and nationalism; anthropology and history; Tibet; China, Mongolia, Himalayas

Vanessa M. Hildebrand, PhD  
(Washington University)  
Assistant Professor  
Sociocultural anthropology; maternal and reproductive health; science and technology studies; global health and global health policy; Southeast Asia, Indonesia, United States

Lee D. Hoffer, PhD  
(University of Colorado, Denver; Washington University School of Medicine)  
Associate Professor  
Cultural and medical anthropology; drug addiction; psychiatric epidemiology; ethnographic research methods; complex systems; computational modeling; economic anthropology; United States

Jill E. Korbin, PhD  
(University of California, Los Angeles)  
Lucy Adams Leffingwell Professor; Associate Dean, College of Arts and Sciences; Director, Schubert Center for Child Studies; Co-Director, Childhood Studies Program  
Cultural, medical, and psychological anthropology; culture and human development; child maltreatment; neighborhood; United States; Old Order Amish

Janet McGrath, PhD  
(Northwestern University)  
Professor; Director of Graduate Programs; Associate Professor of International Health, School of Medicine  
Biomedical anthropology; anthropology of infectious disease; international and global health; AIDS; urban health; United States, Africa

Jim Shaffer, PhD  
(University of Wisconsin, Madison)  
Associate Professor  
Archaeology; Middle East, Central Asia, Indus Valley, India

Lihong Shi, PhD  
(Tulane University)  
Assistant Professor  
Sociocultural anthropology; reproduction, gender, marriage, and family relations, population aging and sex-ratio imbalance; China, East Asia
Adjunct Faculty

Jennifer Furin, MD
(Harvard University; University of California)
Adjunct Assistant Professor; Lecturer, Department of Global Health and Social Medicine, Harvard Medical School
Medical anthropology; infectious diseases; HIV; TB; community health; health policy and programming; Haiti, Peru, former Soviet Union, Resotho, Rwanda

Bridget M. Haas, PhD
(University of California, San Diego)
Adjunct Assistant Professor
Cultural, medical, and psychological anthropology; refugees and asylum seekers; migration and health; culture and trauma; violence; families and youth; United States

Yohannes Haile-Selassie, PhD
(University of California, Berkeley)
Adjunct Professor; Curator and Head of Physical Anthropology, Cleveland Museum of Natural History
Human evolution

David Kaawa-Mafigi, PhD
(Case Western Reserve University)
Adjunct Assistant Professor
Medical anthropology; global public health; social patterning of health; newly emerging and re-emerging infectious disease control; innovative health sciences educational systems; Africa, Uganda

Bruce Latimer, PhD
(Kent State University)
Professor; Professor, Department of Orthodontics, School of Dental Medicine
Biological anthropology; Plio-Pleistocene hominin evolution; comparative primate anatomy; biomechanics of locomotor system

Yohannes Haile-Selassie, PhD
(University of California, Berkeley)
Adjunct Professor; Curator and Head of Physical Anthropology, Cleveland Museum of Natural History
Human evolution

Patricia Marshall, PhD
(University of Kentucky)
Professor, Department of Bioethics, School of Medicine
Empirical bioethics research; informed consent to research; ethnics in genetics research; genomic research in Africa; cross-cultural studies

Scott W. Simpson, PhD
(Kent State University)
Professor, Department of Anatomy, School of Medicine
Miocene-Pleistocene hominin evolution; dental anthropology; human anatomy; functional anatomy

James C. Spilsbury, PhD
(Case Western Reserve University)
Assistant Professor & Director, Academic Development Core, Center for Clinical Investigation, Case School of Medicine
Cultural and medical anthropology; sleep, child maltreatment; United States

Emeriti

Charlotte Ikels, PhD
(University of Hawaii)
Professor Emerita
Cross-cultural aging, lifecourse, death and dying, intergenerational relationships, urban life, comparative bioethics; China

Courses

ANTH 102. Being Human: An Introduction to Social and Cultural Anthropology. 3 Units.
The nature of culture and humans as culture-bearing animals. The range of cultural phenomena including language, social organization, religion, and culture change, and the relevance of anthropology for contemporary social, economic, and ecological problems.

ANTH 103. Introduction to Human Evolution. 3 Units.
Physical, cultural, and technological evolution of humans. The systematic interrelationships between humans, culture, and environment.

ANTH 107. Archaeology: An Introduction. 3 Units.
Basic archaeological concepts are discussed followed by a review of human cultural and biological evolution from the earliest times through development of state organized societies. Geographical scope is worldwide with special attention given to ecological and cultural relationships affecting human societies through time.

ANTH 202. Archaeology of Eastern North America. 3 Units.
This course is an introduction to the archaeology and prehistory of the eastern woodlands of North America. Course material will focus on the archaeological record of native societies living east of the Mississippi River from the first arrivals at the end of the Pleistocene up to the coming of Europeans. Specific topics for discussion include late Pleistocene settlement, hunter-gatherer environmental adaptations, the origin of food production, and the development of ranked societies.
ANTH 215. Health, Culture, and Disease: An Introduction to Medical Anthropology. 3 Units.
This course is an introduction to the field of Medical Anthropology. Medical Anthropology is concerned with the cross-cultural study of culture, health, and illness. During the course of the semester, our survey will include (1) theoretical orientations and key concepts; (2) the cross-cultural diversity of health beliefs and practices (abroad and at home); and (3) contemporary issues and special populations (e.g., AIDS, homelessness, refugees, women's health, and children at risk).

ANTH 225. Evolution. 3 Units.
Multidisciplinary study of the course and processes of organic evolution provides a broad understanding of the evolution of structural and functional diversity, the relationships among organisms and their environments, and the phylogenetic relationships among major groups of organisms. Topics include the genetic basis of micro- and macro-evolutionary change, the concept of adaptation, natural selection, population dynamics, theories of species formation, principles of phylogenetic inference, biogeography, evolutionary rates, evolutionary convergence, homology, Darwinian medicine, and conceptual and philosophic issues in evolutionary theory. Offered as ANTH 225, BIOL 225, EEPS 225, HSTY 225, and PHIL 225.

ANTH 233. Introduction to Jewish Folklore. 3 Units.
Exploration of a variety of genres, research methods and interpretations of Jewish folklore, from antiquity to the present. Emphasis on how Jewish folk traditions and culture give us access to the spirit and mentality of the many different generations of the Jewish ethnic group, illuminating its past and informing the direction of its future development. Offered as ANTH 233, RLGN 233, and JDST 233.

ANTH 295. Comparative Primate Behavior. 3 Units.
The behavior of non-human primates (prosimians, monkeys, and apes) and the relevance of these studies for understanding the evolution of human behavior. Biological and ecological influences on behavior. The social aspects of primate life, both human and nonhuman. Recommended preparation: ANTH 102 or ANTH 103 or consent of department.

ANTH 302. Darwinian Medicine. 3 Units.
Darwinian medicine deals with evolutionary aspects of modern human disease. It applies the concepts and methods of evolutionary biology to the question of why we are vulnerable to disease. Darwinian (or evolutionary) medicine proposes several general hypotheses about disease causation including disease as evolutionary legacy and design compromise, the result of a novel environment, a consequence of genetic adaptation, the result of infectious organisms' evolutionary adaptations, and disease symptoms as manifestation of defense mechanisms. It proposes that evolutionary ideas can explain, help to prevent and perhaps help to treat some diseases. This course presents the basic logic of Darwinian medicine and evaluates hypotheses about specific diseases that illustrate each of the hypotheses about disease causation. Recommended preparation: ANTH 103. Offered as ANTH 302 and ANTH 402.

ANTH 304. Introduction to the Anthropology of Aging. 3 Units.
Reviews historical and methodological approaches to the study of aging. Examines theoretical assumptions about aging by comparing studies from Western and non-Western societies that illustrate the differential importance of culture in the experience of aging. Recommended preparation: ANTH 102. Offered as ANTH 304 and ANTH 404.

ANTH 305. Child Policy. 3 Units.
This course introduces students to issues in public policy that impact children and families. Local, state, and federal child policy will be considered, and topics will include, for example, policies related to child poverty, education, child welfare, juvenile justice, and children's physical and mental health. Students will learn how policy is developed, how research informs policy and vice versa, and a framework for analyzing social policy. Recommended preparation: One social sciences course or consent. Offered as ANTH 305, CHST 301, and POSC 382A.

ANTH 306. The Anthropology of Childhood and the Family. 3 Units.
Child-rearing patterns and the family as an institution, using evidence from Western and non-Western cultures. Human universals and cultural variation, the experience of childhood and recent changes in the American family. Recommended preparation: ANTH 102. Offered as ANTH 306 and ANTH 406.

ANTH 307. Experiential Learning in Child Policy. 3 - 6 Units.
Focus on state and federal legislative policy impacting children, youth, and families. Course includes an experiential learning component at the state or federal level and a travel experience to either Columbus, OH or Washington, DC to learn firsthand how policy is formed. Students may take this course twice for credit. Offered as ANTH 307 and CHST 302.

ANTH 308. Child Policy Externship. 3 Units.
Externships offered through CHST 398/ANTH 308 give students an opportunity to work directly with professionals who design and implement policies that impact the lives of children and their families. Agencies involved are active in areas such as public health, including behavioral health, education, juvenile justice, childcare and/or child welfare. Students apply for the externships, and selected students are placed in local public or nonprofit agencies with a policy focus. Each student develops an individualized learning plan in consultation with the Childhood Studies Program faculty and the supervisor in the agency. CHST 398/ANTH 308 is a 3 credit-hour course and may be taken twice for a total of 6 credit hours. Offered as CHST 398 and ANTH 308. Prereq: CHST 301.

ANTH 310. Introduction to Linguistic Anthropology. 3 Units.
This is an introduction to the core concepts, theories and methodologies that form the study of language from an anthropological point of view. The course provides exposure to current issues in linguistic anthropological research and reviews some of the foundational topics of research past, highlighting the contributions of linguistics to anthropology and social science. Topics to be explored include: 1) an overview of the study of language (language structure and patterns, the effects of linguistic categories on thought and behavior, meaning and linguistic relativity, cross-language comparison, and non-verbal communication); 2) doing linguistic anthropology "on the ground" (an intro to the laboratory and field techniques of linguistic anthropology); 3) the study of language as function and social action (language and social structure speech acts and events, verbal art, language and emotion); and 4) the study of language/discourse and power (language in politics, medicine, and law). Offered as ANTH 310 and ANTH 410.
ANTH 311. Anthropology of Obesity. 3 Units.
Obesity is a pressing topic in global health. Increasingly, anthropology is turning to investigate multiple facets of the study of obesity. Theoretically and methodologically, the study of obesity is particularly interesting due to the combination of cultural and biological perspectives as well as due to the contemporary focus on globalization. This field of study also includes interdisciplinary perspectives from clinical health sciences, public health, sociology, psychology, psychiatry, neuroscience, and other fields. This course is designed as an intensive research course that combines reading key texts with learning data analysis and writing skills using original mixed-methods data on global obesity stigma in three cultures. Students will be working in lab teams to hone data analysis and writing skills. The final product of the course is a contribution to an original paper to go out for review for publication. IRB certification is required for this class. Students may obtain IRB training during the first two weeks of class. Offered as ANTH 311 and ANTH 411. Prereq: ANTH 102, ANTH 103, and ANTH 215.

ANTH 312. Ethnography of Southeast Asia. 3 Units.
This course examines the people and cultures of Southeast Asia from an anthropological perspective. From a starting place of the local people we will explore important aspects of life in this region such as agriculture, religion, health, medicine, nation-building, ethnic identity, art, and technology. Additionally, we will examine and question the ideas, traditions, and scholarly modes of study that brought this geographical area together as a region. Offered as ANTH 312 and ANTH 412.

ANTH 313. The Anthropology of Adolescence. 3 Units.
This course investigates the anthropology of adolescence. What are the conditions under which adolescence has appeared around the world as a life stage? What are the roles of adolescence cross-culturally? What are the varieties of adolescent experience? Through classic and contemporary texts, the course will address these questions as well as special topics particularly important to adolescence such as globalization, mental health, and sexuality. Offered as ANTH 313 and ANTH 413.

ANTH 314. Cultures of the United States. 3 Units.
This course considers the rich ethnic diversity of the U.S. from the perspective of social/cultural anthropology. Conquest, immigration, problems of conflicts and accommodation, and the character of the diverse regional and ethnic cultures are considered as are forms of racism, discrimination, and their consequences. Groups of interest include various Latin/o and Native peoples, African-American groups, and specific ethnic groups of Pacific, Mediterranean, European, Asian, and Caribbean origin. Offered as ANTH 314, ETHS 314, and ANTH 414.

ANTH 316. Current Global Health Events. 3 Units.
This course will introduce students to an anthropological approach to understanding disease, illness, sickness and suffering in a global health context. The course will expose students to biological, socio-cultural, historical, political-economic, and epidemiological assessments of the disease and illness states. Students will be asked to bring a critical focus to the use of ethnographic, population-based, and clinical approaches to addresses global health problems. Additionally students will learn about the key organizations, institutions, and commercial enterprises that come to play in the assessment, prioritizing, and treatment of these health issues. Counts as SAGES Departmental Seminar. Prereq: ANTH 102 and ANTH 215.

ANTH 317. Asian Medical Systems. 3 Units.
Examines the philosophical assumptions and therapies of the traditional and contemporary medical systems of India, Tibet, China, and Japan. Particular attention will be given to the folk, popular, and institutional sectors of medical practice as well as to the contemporary relationship between traditional medicine and Western medicine in each of these societies. Recommended preparation: ANTH 102. Offered as ANTH 317 and ANTH 417.

ANTH 318. Death and Dying. 3 Units.
Examines cultural context of death and dying. Topics include social and psychological consequences of changing patterns of mortality, attitudes towards the taking of life, preparation for death, mortuary rituals, grief and mourning, and nature of relationship between living and dead. Recommended preparation: ANTH 102. Offered as ANTH 318 or ANTH 418.

ANTH 319. Introduction to Statistical Analysis in the Social Sciences. 3 Units.
Statistical description (central tendency, variation, correlation, etc.) and statistical evaluation (two sample comparisons, regression, analysis of variance, non-parametric statistics). Developing an understanding of statistical inference, particularly on proper usage of statistical methods. Examples from the social sciences. Cannot be used to meet the A&S Humanities and Social Sciences requirement. Not available for credit to students who have completed STAT 201 or PSCL 282. Counts for CAS Quantitative Reasoning Requirement. Prereq: Major in Anthropology.

ANTH 321. Methods in Archaeology. 3 Units.
This course reviews the basic methods and techniques used in modern anthropological archaeology. Topics to be discussed include the nature of the archaeological record, research design, techniques of field archaeology, methods of laboratory analysis, museum archaeology, ethnarchaeology, and cultural interpretation. Prereq: ANTH 107.

ANTH 323. AIDS: Epidemiology, Biology, and Culture. 3 Units.
This course will examine the biological and cultural impact of AIDS in different societies around the world. Topics include: the origin and evolution of the virus, the evolutionary implications of the epidemic, routes of transmission, a historical comparison of AIDS to other epidemics in human history, current worldwide prevalences of AIDS, and cultural responses to the epidemic. Special emphasis will be placed on the long-term biological and social consequences of the epidemic. Recommended preparation: ANTH 102 or ANTH 103 or ANTH 105. Offered as ANTH 323 and ANTH 423.

ANTH 324. Field Methods in Archaeology. 3 - 4 Units.
This field course is designed to give the student a comprehensive introduction to archaeological field work. All participants will be introduced to the methods of archaeological survey, techniques of hand excavation, artifact identification, and the preparation of field notes and documentation. In large measure this is a "learning through doing" course which is supplemented by formal and informal lectures and discussions about archaeological methods and regional prehistory. The course will take place from Monday through Friday at an archaeological site in northeast Ohio. Students are responsible for their own transportation to and from the field site and must bring a sack lunch. All participants will receive a field manual which will provide detailed information on the course and techniques of field work.
ANTH 326. Power, Illness, and Inequality: The Political Economy of Health. 3 Units.
This course explores the relationship between social inequality and the distribution of health and illness across class, race, gender, sexual orientation, and national boundaries. Class readings drawn from critical anthropological approaches to the study of health emphasize the fundamental importance of power relations and economic constraints in explaining patterns of disease. The course critically examines the nature of Western biomedicine and inequality in the delivery of health services. Special consideration is given to political economic analysis of health issues in the developing world such as AIDS, hunger, reproductive health, and primary health care provision. Recommended preparation: ANTH 102 or ANTH 215. Offered as ANTH 326 and ANTH 426.

ANTH 327. Ancient Cultures of the Ohio Region. 3 Units.
This course surveys the archaeology of Native American cultures in the Great Lakes region from ca. 10,000 B.C. to A.D. 1700. The geographic scope of this course is the upper Midwest, southern Ontario, and the St. Lawrence Valley with a focus on the Ohio region. Recommended preparation: ANTH 107. Offered as ANTH 327 and ANTH 427.

ANTH 328. Medical Anthropology and Public Health. 3 Units.
Anthropology has a longstanding relationship with the field of public health, which dates back to before the flourishing of medical anthropology as a subfield. Direct participation of medical anthropologists in public health research and practice continues to grow. This course explores the intersection of medical anthropology and public health from the perspective of anthropological history, theory, and methods. Course topics include: the history of anthropological work in public health, medical anthropology theory as a guide to anthropological public health research, and anthropological methods and approaches to public health work. Case studies from around the world will be employed throughout the course. Offered as ANTH 328 and ANTH 428.

ANTH 330. Special Topics in Prehistory. 3 Units.
Special topics or geographical areas of archaeological significance (e.g., the origins of food production, the archaeology of the Mediterranean, the archaeology of North America). Recommended preparation: ANTH 102 or ANTH 107.

ANTH 331. The Most Ancient Near East. 3 Units.
The Near East, archaeologically, is the most intensely researched area in the world. The research, spanning 150 years, reveals a continuous record of human adaptation spanning two million years, five human species, multiple major environmental changes, and shifts in human adaptive strategies from nomadic hunting and gathering to sedentary village agriculture and the emergence of urban centers “civilization.” The archaeological record of this extraordinary period beginning two million years ago until about 4000 BC is reviewed. Emphasis is placed on the human response to social and ecological changes. The course examines how the emergence of sedentary settlements, surplus food production, population growth, interregional trade, and social-economically stratified societies fundamentally changed the human condition. Recommended preparation: ANTH 102 or ANTH 107.

ANTH 333. Roots of Ancient India: Archaeology of South Asia. 3 Units.
Archaeological discoveries in South Asia (modern India, Pakistan, Sri Lanka, Bangladesh, and Nepal) reveal a continuous record of human habitation from almost two million years ago until the present. Early human populations in the region encountered dramatically changing ecological conditions resulting in various cultural adaptations over this long period. Beginning with the earliest hunter-gatherer populations, archaeological data reveal a diversity of cultural changes/adaptations in South Asia resulting in the indigenous development of sedentary agricultural societies coexisting with hunters and gatherers, and with pastoral nomadic groups interacting over diverse ecotones. These cultural developments resulted in the formation of the Harappan (Indus Valley) culture - a unique, ancient (2600-1300 BC) Old World civilization. Archaeological data indicate this Harappan culture provided basic fundamental cultural traits that evolved into the culturally Early Historic Indian Tradition. Special attention is given to theoretical controversies surrounding the cultural continuity issue in South Asian culture history and its significance for understanding Old World archaeology. Recommended preparation: ANTH 102 or ANTH 107.

ANTH 335. Illegal Drugs and Society. 3 Units.
This course provides perspectives on illegal drug use informed by the social, political and economic dimensions of the issues. Framed by the history, epidemiology, and medical consequences of drug use, students will confront the complex challenges posed by addiction. Anthropological research conducted in the U.S. and cross-culturally will demonstrate, elaborate and juxtapose various clinical, public health, and law enforcement policies and perspectives. Topics examined will include: why exclusively using a bio-medical model of addiction is inadequate; how effective is the war on drugs; what prevention, intervention and treatment efforts work; and various ideological/moral perspectives on illegal drug use. Offered as ANTH 335 and ANTH 435.

ANTH 338. Maternal Health: Anthropological Perspectives on Reproductive Practices and Health Policy. 3 Units.
The reproductive process is shared by humans as biological beings. However, the experience of pregnancy and childbirth is also dependent on the cultural, social, political, historical, and political-economic setting. This course frames issues in reproductive health by looking at the complex issues associated with maternal health and mortality worldwide. After reviewing biomedical perspectives on reproductive processes this course will focus on childbirth and pregnancy as the process and ritual by which societies welcome new members. This course will review ethnomedical concepts; discuss the interaction between local, national, and global agendas shaping reproductive practices; and conclude with anthropological critiques of reproductive health initiatives. Offered as ANTH 338 and ANTH 438.
ANTH 339. Ethnographic and Qualitative Research Methods. 3 Units.
This is a course on applying ethnographic research methods in the social sciences. Ethnographic research seeks to understand and describe the experiences of research participants (i.e. subjects) through becoming involved in their daily lives. Findings from ethnography are generated through systematic observation within the natural context in which behavior occurs (i.e. fieldwork). Unlike methods that emphasize detachment, distance, and objectivity, ethnography involves developing knowledge by becoming an ad hoc member of the group(s) one is studying. The principal techniques of ethnography, “participant-observation” and “In-depth open ended interviewing,” require actively engaging the research process. This class will explore ethnographic research techniques, as well as other qualitative research methods. In addition to addressing how such methods make claims about social phenomena, this class will also explore more practical topics such as: developing questions, entering the field, establishing rapport, taking and managing field notes, coding data, and data analysis. Lectures, readings, and class discussion will be complimented by assignments using techniques. Offered as ANTH 339 and ANTH 439. Prereq: ANTH 102.

ANTH 347. Cultural Ecology: An Epistemological Approach to Environmental Sustainability. 3 Units.
This course provides the understanding that the realm of human culture is where both the cause and cure of nearly all contemporary environmental sustainability challenges are found. This is because culture is the medium through which humans as living systems perceive, interpret, and act upon their environment. Through understanding principles that guide living systems and applying them to human/nature interaction in diverse cultures throughout the world, students develop an ecological epistemology, or way of knowing nature. This leads to more effective advocacy for environmental sustainability and an increasing depth in interaction with nature, particularly in the domains of aesthetics and the sacred. Offered as ANTH 347 and ANTH 447. Counts as SAGES Departmental Seminar. Prereq: ANTH 102.

ANTH 349. Cultures of Latin America. 3 Units.
The aim of this course is to consider cultural diversity and social inequality in contemporary Latin America from an anthropological perspective. A variety of aspects related to ethnicity, religion, music, gender, social movements, cuisine, urban spaces, violence, and ecology are considered in addition to current economic and political issues. These topics will be analyzed in relation to Latin America's complex historical and social formation and its identity representations. The course takes under consideration various case studies in which not just local communities but also perceptions of national institutions and practices will be analyzed from pluralistic approaches (provided by either Latin American and non-Latin American researchers) that combine fieldwork, interviews and life experiences with textual and media sources. Special attention will be paid to contemporary global issues affecting Latin America. Offered as ANTH 349 and ANTH 449. Counts as SAGES Departmental Seminar. Prereq: ANTH 102.

ANTH 350. Culture, Science and Identity. 3 Units.
This course in the Cultural Studies of Science focuses on the ways in which social identities are constructed and imagined in contemporary and historical sciences and medicines. In particular, the course will consider gender, ethnic, "racial," class and age identities as these are (re)constructed over time in medical and natural scientific discourses across professional cultures. Attention is paid to the means by which notions of normality and abnormality and category specificity are created and altered and to the dynamics of discursive formations. The course also considers the social and medical consequences of specific constructions of biology in general and with respect to specific identities and social classifications. Offered as ANTH 350 and ANTH 450.

ANTH 351. Topics in International Health. 3 Units.
Special topics of interest in International Health. Recommended preparation: ANTH 102 or ANTH 215. Offered as ANTH 351 and ANTH 451.

ANTH 352. Japanese Culture and Society. 3 Units.
Focuses on contemporary Japanese cultural and social institutions. Topics include child-rearing, personality, values, education, gender roles, the dual economy, and popular culture. Recommended preparation: ANTH 102. Offered as ANTH 352 and ANTH 452.

ANTH 353. Chinese Culture and Society. 3 Units.
Focuses on Chinese cultural and social institutions during the Maoist and post-Maoist eras. Topics include ideology, economics, politics, religion, family life, and popular culture. Recommended preparation: ANTH 102. Offered as ANTH 353 and ANTH 453.

ANTH 354. Health and Healing in East Asia. 3 Units.
This course examines the illness experiences and the healing practices in East Asia. After introducing the anthropological approaches to the study of medicine, this course will explore the practices of ethnomedicine and biomedicine, mental health, family planning and reproductive health, the experience of aging and care giving, infectious disease, environmental health, and biotechnology. By delving into the illness experiences and the healing practices in East Asia, the course will discuss issues related to medical pluralism, health inequality, biological citizenship, social stigmatization, and bioethics. Offered as ANTH 354 and ANTH 454.

ANTH 359. Introduction to International Health. 3 Units.
Critical health problems and needs in developing countries. Prevalence of infectious disease, malnutrition, chronic disease, injury control. Examines strategies for improvement of health in less developed countries. Recommended preparation: ANTH 102. Offered as ANTH 359 and ANTH 459.

ANTH 360. Global Politics of Fertility, Family Planning, and Population Control. 3 Units.
This course offers an anthropological examination of fertility behaviors around the world. In particular, it explores various historical, cultural, socioeconomic, political, and technological factors contributing to reproductive activities. After introducing the anthropological approaches to the study of fertility, the course will delve into the ways to regulate fertility in historical and contemporary times, various factors contributing to fertility change, state intervention in reproduction through voluntary and coercive family planning programs, and new reproductive technologies and ethical concerns surrounding assisted reproduction and abortion. Offered as ANTH 360, ANTH 460 and WGST 360.
ANTH 361. Urban Health. 3 Units.
This course provides an anthropological perspective on the most important health problems facing urban population around the world. Special attention will be given to an examination of disparities in health among urban residents based on poverty, race/ethnicity, gender, and nationality. Offered as ANTH 361 and ANTH 461.

ANTH 362. Contemporary Theory in Anthropology. 3 Units.
A critical examination of anthropological thought in England, France and the United States during the second half of the twentieth century. Emphasis will be on the way authors formulate questions that motivate anthropological discourse, on the way central concepts are formulated and applied and on the controversies and debates that result. Readings are drawn from influential texts by prominent contemporary anthropologists. Recommended preparation: ANTH 102. Offered as ANTH 362 and ANTH 462.

ANTH 365. Gender and Sex Differences: Cross-cultural Perspective. 3 Units.
Gender roles and sex differences throughout the life cycle considered from a cross-cultural perspective. Major approaches to explaining sex roles discussed in light of information from both Western and non-Western cultures. Offered as ANTH 365, ANTH 465 and WGST 365. Prereq: ANTH 102 or consent of department.

ANTH 366. Population Change: Problems and Solutions. 3 Units.
The course examines population processes and their social consequences from an anthropological perspective. It introduces basic concepts and theories of population studies and demonstrates the ways in which anthropological research contributes to our understanding of population issues. We will explore questions such as: How has world population changed in history? How does a population age or grow younger? What are the factors affecting population health? Why do people migrate? And what are the policy implications of population change? We will examine the sociocultural, economic, political, and ecological factors contributing to population processes, such as factors affecting childbearing decisions, cultural context of sex-selective abortion, various caregiving arrangements for the elderly, and policy responses to population change. We will explore these issues with cases from across the world, with a special focus on China, the world's most populous country with the most massive family-planning program in modern human history. Offered as: ANTH 366 and ANTH 466.

ANTH 367. Topics in Evolutionary Biology. 3 Units.
The focus for this course on a special topic of interest in evolutionary biology will vary from one offering to the next. Examples of possible topics include theories of speciation, the evolution of language, the evolution of sex, evolution and biodiversity, molecular evolution. Students will participate in discussions and lead class seminars on evolutionary topics and in collaboration with an advisor or advisors, select a topic for a research paper or project. Each student will write a major research report or complete a major project and will make a public presentation of her/his findings. Offered as ANTH 368, BIOL 369, and PHIL 368. Counts as SAGES Senior Capstone. Prereq: ANTH 225, BIOL 225, GEOL 225, HSTY 225, PHIL 225 or its equivalent or permission of instructor.

ANTH 368. Evolutionary Biology Capstone. 3 Units.
This course focuses on a special topic of interest in evolutionary biology that will vary from one offering to the next. Examples of possible topics include theories of speciation, the evolution of language, the evolution of sex, evolution and biodiversity, molecular evolution. Students will participate in discussions and lead class seminars on evolutionary topics and in collaboration with an advisor or advisors, select a topic for a research paper or project. Each student will write a major research report or complete a major project and will make a public presentation of her/his findings. Offered as ANTH 368, BIOL 369, and PHIL 368. Counts as SAGES Senior Capstone. Prereq: ANTH 225, BIOL 225, GEOL 225, HSTY 225, PHIL 225 or its equivalent or permission of instructor.

ANTH 370. Field Seminar in Paleoanthropology. 12 Units.
Paleoanthropology is the study of human physical and cultural evolution based on fossils and cultural remains from ancient geological times. These fossils and cultural remains are collected by conducting fieldwork in various parts of the world where geological phenomena have exposed fossiliferous sedimentary windows from the deep past. Hence, fieldwork is one of the major backbones of paleoanthropology. This course is designed for advanced undergraduate students who are interested in pursuing higher degrees in paleoanthropology, human paleobiology, evolutionary biology, or other related disciplines. This course introduces students to the principles and methods of paleontological fieldwork in real time. It introduces students to paleoanthropological fieldwork from locating fossiliferous areas based on aerial photo interpretations to survey methodology; from methods of systematic excavation, fossil collection and documentation in the field, to curation and preparation of fossil specimens in laboratories; from conducting scientific analyses in laboratory environments to subsequently publishing the results in peer-reviewed journals. Recommended preparation: ANTH 377. Prereq: ANTH 103 and ANTH 375.

ANTH 371. Culture, Behavior, and Person: Psychological Anthropology. 3 Units.
Cross-cultural perspectives on personality, human development, individual variability, cognition, deviant behavior, and the role of the individual in his/her society. Classic and contemporary anthropological writings on Western and non-Western societies. Recommended preparation: ANTH 102. Offered as ANTH 371 and ANTH 471.

ANTH 372. Anthropological Approaches to Religion. 3 Units.
The development of, and current approaches to, comparative religion from an anthropological perspective. Topics include witchcraft, ritual, myth, healing, religious language and symbolism, religion and gender, religious experience, the nature of the sacred, religion and social change, altered states of consciousness, and evil. Using material from a wide range of world cultures, critical assessment is made of conventional distinctions such as those between rational/irrational, natural/supernatural, magic/religion, and primitive/civilized. Recommended preparation: ANTH 102. Offered as ANTH 372, RLGN 372 and ANTH 472.

ANTH 375. Human Evolution: The Fossil Evidence. 3 Units.
This course will survey the biological and behavioral changes that occurred in the hominin lineage during the past five million years. In addition to a thorough review of the fossil evidence for human evolution, students will develop the theoretical framework in evolutionary biology. Recommended preparation: ANTH 377, BIOL 225. Offered as ANAT 375, ANTH 375, ANAT 475 and ANTH 475. Prereq: ANTH 103.
ANTH 376. Topics in the Anthropology of Health and Medicine. 3 Units.
Special topics of interest, such as the biology of human adaptability; the ecology of the human life cycle health delivery systems; transcultural psychiatry; nutrition, health, and disease; paleoepidemiology; and population anthropology. Recommended preparation: ANTH 102 or ANTH 103. Offered as ANTH 376 and ANTH 476.

ANTH 377. Human Osteology. 4 Units.
This course for upper division undergraduates and graduate students will review the following topics: human skeletal development and identification; and forensic identification (skeletal aging, sex identification and population affiliation). Offered as ANAT 377, ANTH 377, ANAT 477 and ANTH 477.

ANTH 378. Reproductive Health: An Evolutionary Perspective. 3 Units.
This course provides students with an evolutionary perspective on the factors influencing human reproductive health, including reproductive biology, ecology, and various aspects of natural human fertility. Our focus will be on variation in human reproduction in mostly non-western populations. Recommended preparation for ANTH 378: ANTH 103. Offered as ANTH 378 and ANTH 478. Counts as SAGES Departmental Seminar.

ANTH 379. Topics in Cultural and Social Anthropology. 3 Units.
Special topics of interest across the range of social and cultural anthropology. Recommended preparation: ANTH 102. Offered as ANTH 379 and ANTH 479.

ANTH 380. Independent Study in Laboratory Archaeology I. 1 - 3 Unit.
This course provides an introduction to the basic methods and techniques of artifact curation and laboratory analysis in archaeology. Under the supervision of the instructor, each student will develop and carry out a focused project of material analysis and interpretation using the archaeology collections of the Cleveland Museum of Natural History. Each student is required to spend a minimum of two hours per week in the Archaeology laboratory for each credit hour taken. By the end of the course, the student will prepare a short report describing the results of their particular project. Recommended preparation: ANTH 107 and permission of department, and prior permission of Department of Archaeology at the Cleveland Museum of Natural History.

ANTH 381. Independent Study in Laboratory Archaeology II. 1 - 3 Unit.
This course provides an introduction to the basic methods and techniques of artifact curation and laboratory analysis in archaeology. Under the supervision of the instructor, each student will develop and carry out a focused project of material analysis and interpretation using the archaeology collections of the Cleveland Museum of Natural History. Each student is required to spend a minimum of two hours per week in the Archaeology laboratory for each credit hour taken. By the end of the course, the student will prepare a short report describing the results of their particular project. Recommended preparation: ANTH 107 and permission of department, and prior permission of Department of Archaeology at the Cleveland Museum of Natural History.

ANTH 382. Anthropological and Ecological Perspectives on Preserving and Restoring the Natural World. 3 Units.
Now that the environmentally deleterious effects of modern Western culture on the natural world have reached major proportions it has become crucial to explore innovative solutions to this dilemma. In this course novel perspectives derived from the intersection of anthropology and ecology are discussed. The primary perspective focused upon is the understanding that human culture and the natural world in which it is embedded are essentially communicative, or semiotic processes, which thrive upon diverse interaction and feedback. Preserving and restoring the Natural World thus shifts from protecting individual species and particular cultural practices to enhancing the communicative matrix of life and multiple cultural views of the environment. Through this understanding, students will learn to apply a more elegant, effective, and aesthetically pleasing perspective to the challenging environmental issues facing our contemporary world. An in-depth examination of the North American Prairie, along with a comparison of influences on the landscape by indigenous and modern Western Culture will serve as the particular region of focus. Offered as ANTH 382 and ANTH 482. Counts as SAGES Departmental Seminar.

ANTH 385. Applied Anthropology. 3 Units.
This class will provide students with an overview of how anthropologists put theories, methods, and findings to use in addressing social issues and problems. Applied projects presented will span a diverse range of topics and fields, including: healthcare and medicine, nutrition, international development, displacement of populations, education, as well projects from business and industry. Class discussion will address orientations of and advantages in applied approaches, as well the ethical questions such projects often encounter. Offered as ANTH 385 and ANTH 485.

ANTH 387. Anthropology of Body Image. 3 Units.
The study of body image is an increasingly investigated area in anthropology. Theoretically and methodologically, it is particularly interesting due to the combination of cultural and biological perspectives in its investigation as well as due to the contemporary focus on globalization. This field of study also includes interdisciplinary perspectives from psychology, psychiatry, neuroscience, and other fields. This course first examines the definition and history of the study of body image in cultural anthropology. We examine an overview of how anthropology contributes to the wider field of body image through key texts in cultural, biocultural, and linguistic anthropology. We then turn to a variety of relevant topics in the anthropology of body image including body image development, alternate theoretical conceptions of body image, gender and globalization in body image, media and body image, body image and eating disorders, and obesity. Throughout the course, particular attention will be paid to methodology. Students will be responsible for one presentation throughout the course as well as multiple in-class and take home essay assignments. By the end of the course, students should have an excellent understanding of the available literature in the field, have a command of the extant literature, understand relevant methods for various types of research projects and questions, and be able to pose interesting and relevant research questions themselves for future study. Offered as ANTH 387 and ANTH 487. Prereq: ANTH 102, ANTH 103 and ANTH 215.
ANTH 388. Globalization, Development and Underdevelopment: Anthropological Perspective. 3 Units.
This course examines both theoretical and practical perspectives on globalization and economic development in the "Third World." From "Dependency," "Modernization," and "World System" theory to post-structuralist critiques of development discourse, the course seeks to provide a framework for understanding current debates on development and globalization. The "neoliberal monologue" that dominates the contemporary development enterprise is critically examined in the context of growing global inequality. Special consideration is given to the roles of international agencies such as the World Bank, International Monetary Fund, United Nations, and non-governmental organizations (NGOs) in the "development industry." The course also focuses on the contribution of anthropologists to development theory and practice with emphasis on the impact of development on the health of the poor and survival of indigenous cultures. Opportunities for professional anthropologists in the development field are reviewed. Offered as ANTH 388 and ANTH 488. Prereq: ANTH 102.

ANTH 391. Honors Tutorial. 3 Units.
Prereq: Acceptance into Honors Program.

ANTH 392. Honors Tutorial. 3 Units.
Prereq: Acceptance into Honors Program.

ANTH 394. Seminar in Evolutionary Biology. 3 Units.
This seminar investigates 20th-century evolutionary theory, especially the Modern Evolutionary synthesis and subsequent expansions of and challenges to that synthesis. The course encompasses the multidisciplinary nature of the science of evolution, demonstrating how disciplinary background influences practitioners' conceptualizations of pattern and process. This course emphasizes practical writing and research skills, including formulation of testable theses, grant proposal techniques, and the implementation of original research using the facilities on campus and at the Cleveland Museum of Natural History. Offered as ANTH 394, BIOL 394, EEPS 394, HSTY 394, PHIL 394, ANTH 494, BIOL 494, EEPS 494, HSTY 494, and PHIL 494.

ANTH 396. Undergraduate Research in Evolutionary Biology. 3 Units.
Students propose and conduct guided research on an aspect of evolutionary biology. The research will be sponsored and supervised by a member of the CASE faculty or other qualified professional. A written report must be submitted to the Evolutionary Biology Steering Committee before credit is granted. Offered as ANTH 396, BIOL 396, EEPS 396, and PHIL 396. Prereq: ANTH 225 or equivalent.

ANTH 398. Anthropology SAGES Capstone. 3 Units.
Supervised original research on a topic in anthropology, culminating in a written report and a public presentation. The research project may be in the form of an independent research project, a literature review, or some other original project with anthropological significance. The project must be approved and supervised by faculty. Group research projects are acceptable, but a plan which clearly identifies the distinct and substantial role of each participant must be approved by the supervising faculty. Counts as SAGES Senior Capstone. Prereq: Major in Anthropology.

ANTH 398C. Child Policy Externship and Capstone. 3 Units.
Externships offered through CHST/ANTH/PSCL 398C give students an opportunity to work directly with professionals who design and implement policies that impact the lives of children and their families. Agencies involved are active in areas such as public health, including behavioral health, education, juvenile justice, child care and/or child welfare. Students apply for the externships, and selected students are placed in local public or nonprofit agencies with a policy focus. Each student develops an individualized learning plan in consultation with the Childhood Studies Program faculty and the supervisor in the agency. Offered as CHST 398C, ANTH 398C, and PSCL 398C. Counts as SAGES Senior Capstone. Prereq: CHST 301.

ANTH 399. Independent Study. 1 - 6 Unit.
Students may propose topics for independent reading and research.

ANTH 402. Darwinian Medicine. 3 Units.
Darwinian medicine deals with evolutionary aspects of modern human disease. It applies the concepts and methods of evolutionary biology to the question of why we are vulnerable to disease. Darwinian (or evolutionary) medicine proposes several general hypotheses about disease causation including disease as evolutionary legacy and design compromise, the result of a novel environment, a consequence of genetic adaptation, the result of infectious organisms' evolutionary adaptations, and disease symptoms as manifestation of defense mechanisms. It proposes that evolutionary ideas can explain, help to prevent and perhaps help to treat some diseases. This course presents the basic logic of Darwinian medicine and evaluates hypotheses about specific diseases that illustrate each of the hypotheses about disease causation. Recommended preparation: ANTH 103. Offered as ANTH 302 and ANTH 402.

ANTH 404. Introduction to the Anthropology of Aging. 3 Units.
Reviews historical and methodological approaches to the study of aging. Examines theoretical assumptions about aging by comparing studies from Western and non-Western societies that illustrate the differential importance of culture in the experience of aging. Recommended preparation: ANTH 102. Offered as ANTH 304 and ANTH 404.

ANTH 406. The Anthropology of Childhood and the Family. 3 Units.
Child-rearing patterns and the family as an institution, using evidence from Western and non-Western cultures. Human universals and cultural variation, the experience of childhood and recent changes in the American family. Recommended preparation: ANTH 102. Offered as ANTH 306 and ANTH 406.

ANTH 410. Introduction to Linguistic Anthropology. 3 Units.
This is an introduction to the core concepts, theories and methodologies that form the study of language from an anthropological point of view. The course provides exposure to current issues in linguistic anthropological research and reviews some of the foundational topics of research past, highlighting the contributions of linguistics to anthropology and social science. Topics to be explored include: 1) an overview of the study of language (language structure and patterns, the effects of linguistic categories on thought and behavior, meaning and linguistic relativity, cross-language comparison, and non-verbal communication); 2) doing linguistic anthropology "on the ground" (an intro to the laboratory and field techniques of linguistic anthropology); 3) the study of language as function and social action (language and social structure speech acts and events, verbal art, language and emotion); and 4) the study of language/discourse and power (language in politics, medicine, and law). Offered as ANTH 310 and ANTH 410.
ANTH 411. Anthropology of Obesity. 3 Units.
Obesity is a pressing topic in global health. Increasingly, anthropology is turning to investigate multiple facets of the study of obesity. Theoretically and methodologically, the study of obesity is particularly interesting due to the combination of cultural and biological perspectives as well as due to the contemporary focus on globalization. This field of study also includes interdisciplinary perspectives from clinical health sciences, public health, sociology, psychology, psychiatry, neuroscience, and other fields. This course is designed as an intensive research course that combines reading key texts with learning data analysis and writeup skills using original mixed-methods data on global obesity stigma in three cultures. Students will be working in lab teams to hone data analysis and writing skills. The final product of the course is a contribution to an original paper to go out for review for publication. IRB certification is required for this class. Students may obtain IRB training during the first two weeks of class. Offered as ANTH 311 and ANTH 411.

ANTH 412. Ethnography of Southeast Asia. 3 Units.
This course examines the people and cultures of Southeast Asia from an anthropological perspective. From a starting place of the local people we will explore important aspects of life in this region such as agriculture, religion, health, medicine, nation-building, ethnic identity, art, and technology. Additionally, we will examine and question the ideas, traditions, and scholarly modes of study that brought this geographical area together as a region. Offered as ANTH 312 and ANTH 412.

ANTH 413. The Anthropology of Adolescence. 3 Units.
This course investigates the anthropology of adolescence. What are the conditions under which adolescence has appeared around the world as a life stage? What are the roles of adolescence cross-culturally? What are the varieties of adolescent experience? Through classic and contemporary texts, the course will address these questions as well as special topics particularly important to adolescence such as globalization, mental health, and sexuality. Offered as ANTH 313 and ANTH 413.

ANTH 414. Cultures of the United States. 3 Units.
This course considers the rich ethnic diversity of the U.S. from the perspective of social/cultural anthropology. Conquest, immigration, problems of conflicts and accommodation, and the character of the diverse regional and ethnic cultures are considered as are forms of racism, discrimination, and their consequences. Groups of interest include various Latina/o and Native peoples, African-American groups, and specific ethnic groups of Pacific, Mediterranean, European, Asian, and Caribbean origin. Offered as ANTH 314, ETHS 314, and ANTH 414.

ANTH 417. Asian Medical Systems. 3 Units.
Examines the philosophical assumptions and therapies of the traditional and contemporary medical systems of India, Tibet, China, and Japan. Particular attention will be given to the folk, popular, and institutional sectors of medical practice as well as to the contemporary relationship between traditional medicine and Western medicine in each of these societies. Recommended preparation: ANTH 107. Offered as ANTH 317 and ANTH 417.

ANTH 418. Death and Dying. 3 Units.
Examines cultural context of death and dying. Topics include social and psychological consequences of changing patterns of mortality, attitudes towards the taking of life, preparation for death, mortuary rituals, grief and mourning, and nature of relationship between living and dead. Recommended preparation: ANTH 102. Offered as ANTH 318 or ANTH 418.

ANTH 423. AIDS: Epidemiology, Biology, and Culture. 3 Units.
This course will examine the biological and cultural impact of AIDS in different societies around the world. Topics include: the origin and evolution of the virus, the evolutionary implications of the epidemic, routes of transmission, a historical comparison of AIDS to other epidemics in human history, current worldwide prevalences of AIDS, and cultural responses to the epidemic. Special emphasis will be placed on the long-term biological and social consequences of the epidemic. Recommended preparation: ANTH 102 or ANTH 103 or ANTH 105. Offered as ANTH 323 and ANTH 423.

ANTH 426. Power, Illness, and Inequality: The Political Economy of Health. 3 Units.
This course explores the relationship between social inequality and the distribution of health and illness across class, race, gender, sexual orientation, and national boundaries. Class readings drawn from critical anthropological approaches to the study of health emphasize the fundamental importance of power relations and economic constraints in explaining patterns of disease. The course critically examines the nature of Western biomedicine and inequality in the delivery of health services. Special consideration is given to political economic analysis of health issues in the developing world such as AIDS, hunger, reproductive health, and primary health care provision. Recommended preparation: ANTH 102 or ANTH 215. Offered as ANTH 326 and ANTH 426.

ANTH 427. Ancient Cultures of the Ohio Region. 3 Units.
This course surveys the archaeology of Native American cultures in the Great Lakes region from ca. 10,000 B.C. to A.D. 1700. The geographic scope of this course is the upper Midwest, southern Ontario, and the St. Lawrence Valley with a focus on the Ohio region. Recommended preparation: ANTH 107. Offered as ANTH 327 and ANTH 427.

ANTH 428. Medical Anthropology and Public Health. 3 Units.
Anthropology has a longstanding relationship with the field of public health, which dates back to before the flourishing of medical anthropology as a subfield. Direct participation of medical anthropologists in public health research and practice continues to grow. This course explores the intersection of medical anthropology and public health from the perspective of anthropological history, theory, and methods. Course topics include: the history of anthropological work in public health, medical anthropology theory as a guide to anthropological public health research, and anthropological methods and approaches to public health work. Case studies from around the world will be employed throughout the course. Offered as ANTH 328 and ANTH 428.

ANTH 435. Illegal Drugs and Society. 3 Units.
This course provides perspectives on illegal drug use informed by the social, political and economic dimensions of the issues. Framed by the history, epidemiology, and medical consequences of drug use, students will confront the complex challenges posed by addiction. Anthropological research conducted in the U.S. and cross-culturally will demonstrate, elaborate and juxtapose various clinical, public health, and law enforcement policies and perspectives. Topics examined will include: why exclusively using a bio-medical model of addiction is inadequate; how effective is the war on drugs; what prevention, intervention and treatment efforts work; and various ideological/moral perspectives on illegal drug use. Offered as ANTH 335 and ANTH 435.
**ANTH 438. Maternal Health: Anthropological Perspectives on Reproductive Practices and Health Policy. 3 Units.**

The reproductive process is shared by humans as biological beings. However, the experience of pregnancy and childbirth is also dependent on the cultural, social, political, historical, and political-economic setting. This course frames issues in reproductive health by looking at the complex issues associated with maternal health and mortality worldwide. After reviewing biomedical perspectives on reproductive processes this course will focus on childbirth and pregnancy as the process and ritual by which societies welcome new members. This course will review ethnomedical concepts; discuss the interaction between local, national, and global agendas shaping reproductive practices; and conclude with anthropological critiques of reproductive health initiatives. Offered as ANTH 338 and ANTH 438.

**ANTH 439. Ethnographic and Qualitative Research Methods. 3 Units.**

This is a course on applying ethnographic research methods in the social sciences. Ethnographic research seeks to understand and describe the experiences of research participants (i.e., subjects) through becoming involved in their daily lives. Findings from ethnography are generated through systematic observation within the natural context in which behavior occurs (i.e., fieldwork). Unlike methods that emphasize detachment, distance, and objectivity, ethnography involves developing knowledge by becoming an ad hoc member of the group(s) one is studying. The principal techniques of ethnography, "participant-observation" and "in-depth open ended interviewing," require actively engaging the research process. This class will explore ethnographic research techniques, as well as other qualitative research methods. In addition to addressing how such methods make claims about social phenomena, this class will also explore more practical topics such as: developing questions, entering the field, establishing rapport, taking and managing field notes, coding data, and data analysis. Lectures, readings, and class discussion will be complimented by assignments using techniques. Offered as ANTH 339 and ANTH 439.

**ANTH 442. The Challenge of Suffering: Meaning, Responses, and Potential for Growth. 3 Units.**

The interdisciplinary course will address the multiple facets of suffering, including the meaning of suffering, potential for growth and transformation, policies and practices that influence suffering, and those factors that affect quality of life and quality of death. Concepts and theories will be drawn from the social sciences and humanities, as well as from the health disciplines. The influence of socio-political, cultural, and economic forces of suffering will be addressed. Graduate standing or permission of instructor is required. Offered as: ANTH 339 and ANTH 442.

**ANTH 447. Cultural Ecology: An Epistemological Approach to Environmental Sustainability. 3 Units.**

This course provides the understanding that the realm of human culture is where both the cause and cure of nearly all contemporary environmental sustainability challenges are found. This is because culture is the medium through which humans as living systems perceive, interpret, and act upon their environment. Through understanding principles that guide living systems and applying them to human/nature interaction in diverse cultures throughout the world, students develop an ecological epistemology, or way of knowing nature. This leads to more effective advocacy for environmental sustainability and an increasing depth in interaction with nature, particularly in the domains of aesthetics and the sacred. Offered as ANTH 347 and ANTH 447. Counts as SAGES Departmental Seminar.

**ANTH 449. Cultures of Latin America. 3 Units.**

The aim of this course is to consider cultural diversity and social inequality in contemporary Latin America from an anthropological perspective. A variety of aspects related to ethnicity, religion, music, gender, social movements, cuisine, urban spaces, violence, and ecology are considered in addition to current economic and political issues. These topics will be analyzed in relation to Latin America’s complex historical and social formation and its identity representations. The course takes under consideration various case studies in which not just local communities but also perceptions of national institutions and practices will be analyzed from pluralistic approaches (provided by either Latin American and non-Latin American researchers) that combine fieldwork, interviews and life experiences with textual and media sources. Special attention will be paid to contemporary global issues affecting Latin America. Offered as ANTH 349 and ANTH 449. Counts as SAGES Departmental Seminar.

**ANTH 450. Culture, Science and Identity. 3 Units.**

This course in the Cultural Studies of Science focuses on the ways in which social identities are constructed and imagined in contemporary and historical sciences and medicines. In particular, the course will consider gender, ethnic, “racial,” class and age identities as these are (re)constructed over time in medical and natural scientific discourses across professional cultures. Attention is paid to the means by which notions of normality and abnormality and category specificity are created and altered and to the dynamics of discursive formations. The course also considers the social and medical consequences of specific constructions of biology in general and with respect to specific identities and social classifications. Offered as ANTH 350 and ANTH 450.

**ANTH 451. Topics in International Health. 3 Units.**

Special topics of interest in International Health. Recommended preparation: ANTH 102 or ANTH 215. Offered as ANTH 351 and ANTH 451.

**ANTH 452. Japanese Culture and Society. 3 Units.**

Focuses on contemporary Japanese cultural and social institutions. Topics include child-rearing, personality, values, education, gender roles, the dual economy, and popular culture. Recommended preparation: ANTH 102. Offered as ANTH 352 and ANTH 452.

**ANTH 453. Chinese Culture and Society. 3 Units.**

Focuses on Chinese cultural and social institutions during the Maoist and post-Maoist eras. Topics include ideology, economics, politics, religion, family life, and popular culture. Recommended preparation: ANTH 102. Offered as ANTH 353 and ANTH 453.

**ANTH 454. Health and Healing in East Asia. 3 Units.**

This course examines the illness experiences and the healing practices in East Asia. After introducing the anthropological approaches to the study of medicine, this course will explore the practices of ethnomedicine and biomedicine, mental health, family planning and reproductive health, the experience of aging and care giving, infectious disease, environmental health, and biotechnology. By delving into the illness experiences and the healing practices in East Asia, the course will discuss issues related to medical pluralism, health inequality, biological citizenship, social stigmatization, and bioethics. Offered as ANTH 354 and ANTH 454. Prereq: Graduate Standing. Offered as ANTH 354 and ANTH 454.

**ANTH 459. Introduction to International Health. 3 Units.**

Critical health problems and needs in developing countries. Prevalence of infectious disease, malnutrition, chronic disease, injury control. Examines strategies for improvement of health in less developed countries. Recommended preparation: ANTH 102. Offered as ANTH 359 and ANTH 459.
ANTH 460. Global Politics of Fertility, Family Planning, and Population Control. 3 Units.
This course offers an anthropological examination of fertility behaviors around the world. In particular, it explores various historical, cultural, socioeconomic, political, and technological factors contributing to reproductive activities. After introducing the anthropological approaches to the study of fertility, the course will delve into the ways to regulate fertility in historical and contemporary times, various factors contributing to fertility change, state intervention in reproduction through voluntary and coercive family planning programs, and new reproductive technologies and ethical concerns surrounding assisted reproduction and abortion. Offered as ANTH 360, ANTH 460 and WGST 360. Prereq: Graduate Standing.

ANTH 461. Urban Health. 3 Units.
This course provides an anthropological perspective on the most important health problems facing urban population around the world. Special attention will be given to an examination of disparities in health among urban residents based on poverty, race/ethnicity, gender, and nationality. Offered as ANTH 361 and ANTH 461.

ANTH 462. Contemporary Theory in Anthropology. 3 Units.
A critical examination of anthropological thought in England, France and the United States during the second half of the twentieth century. Emphasis will be on the way authors formulate questions that motivate anthropological discourse, on the way central concepts are formulated and applied and on the controversies and debates that result. Readings are drawn from influential texts by prominent contemporary anthropologists. Recommended preparation: ANTH 102. Offered as ANTH 362 and ANTH 462.

ANTH 465. Gender and Sex Differences: Cross-cultural Perspective. 3 Units.
Gender roles and sex differences throughout the life cycle considered from a cross-cultural perspective. Major approaches to explaining sex roles discussed in light of information from both Western and non-Western cultures. Offered as ANTH 365, ANTH 465 and WGST 365.

ANTH 466. Population Change: Problems and Solutions. 3 Units.
The course examines population processes and their social consequences from an anthropological perspective. It introduces basic concepts and theories of population studies and demonstrates the ways in which anthropological research contributes to our understanding of population issues. We will explore questions such as: How has world population changed in history? How does a population age or grow younger? What are the factors affecting population health? Why do people migrate? And what are the policy implications of population change? We will examine the sociocultural, economic, political, and ecological factors contributing to population processes, such as factors affecting childbearing decisions, cultural context of sex-selective abortion, various caregiving arrangements for the elderly, and policy responses to population change. We will explore these issues with cases from across the world, with a special focus on China, the world’s most populous country with the most massive family-planning program in modern human history. Offered as: ANTH 366 and ANTH 466. Prereq: Graduate standing.

ANTH 467. Topics in Evolutionary Biology. 3 Units.
The focus for this course on a special topic of interest in evolutionary biology will vary from one offering to the next. Examples of possible topics include theories of speciation, the evolution of language, the evolution of sex, evolution and biodiversity, molecular evolution. ANAT/ANTH/EEPS/PHIL/PHOL/BIOL 468 will require a longer, more sophisticated term paper, and additional class presentation. Offered as ANTH 367, BIOL 368, EEPS 367, PHIL 367, ANAT 467, ANTH 467, BIOL 468, EEPS 467, PHIL 467 and PHOL 467.

ANTH 470. Tutorial in Physical Anthropology. 3 Units.
Guided readings in physical anthropology. Recommended preparation: Graduate standing and consent of department.

ANTH 471. Culture, Behavior, and Person: Psychological Anthropology. 3 Units.
Cross-cultural perspectives on personality, human development, individual variability, cognition, deviant behavior, and the role of the individual in his/her society. Classic and contemporary anthropological writings on Western and non-Western societies. Recommended preparation: ANTH 102. Offered as ANTH 371 and ANTH 471.

ANTH 472. Anthropological Approaches to Religion. 3 Units.
The development of, and current approaches to, comparative religion from an anthropological perspective. Topics include witchcraft, ritual, myth, healing, religious language and symbolism, religion and gender, religious experience, the nature of the sacred, religion and social change, altered states of consciousness, and evil. Using material from a wide range of world cultures, critical assessment is made of conventional distinctions such as those between rational/irrational, natural/supernatural, magic/religion, and primitive/civilized. Recommended preparation: ANTH 102. Offered as ANTH 372, RLGN 372 and ANTH 472.

ANTH 475. Human Evolution: The Fossil Evidence. 3 Units.
This course will survey the biological and behavioral changes that occurred in the hominin lineage during the past five million years. In addition to a thorough review of the fossil evidence for human evolution, students will develop the theoretical framework in evolutionary biology. Recommended preparation: ANTH 377, BIOL 225. Offered as ANTH 375, ANTH 375, ANAT 475 and ANTH 475. Prereq: ANTH 103.

ANTH 476. Topics in the Anthropology of Health and Medicine. 3 Units.
Special topics of interest, such as the biology of human adaptability; the ecology of the human life cycle health delivery systems; transcultural psychiatry; nutrition, health, and disease; paleoepidemiology; and population anthropology. Recommended preparation: ANTH 102 or ANTH 103. Offered as ANTH 376 and ANTH 476.

ANTH 477. Human Osteology. 4 Units.
This course for upper division undergraduates and graduate students will review the following topics: human skeletal development and identification; and forensic identification (skeletal aging, sex identification and population affiliation). Offered as ANAT 377, ANTH 377, ANAT 477 and ANTH 477.

ANTH 478. Reproductive Health: An Evolutionary Perspective. 3 Units.
This course provides students with an evolutionary perspective on the factors influencing human reproductive health, including reproductive biology, ecology, and various aspects of natural human fertility. Our focus will be on variation in human reproduction in mostly non-western populations. Recommended preparation for ANTH 378: ANTH 103. Offered as ANTH 378 and ANTH 478. Counts as SAGES Departmental Seminar.
ANTH 479. Topics in Cultural and Social Anthropology. 3 Units.
Special topics of interest across the range of social and cultural anthropology. Recommended preparation: ANTH 102. Offered as ANTH 379 and ANTH 479.

ANTH 480. Medical Anthropology and Global Health I. 3 Units.
The first in a sequence of two graduate core courses in medical anthropology and global health. This course focuses on foundational concepts and theories in medical anthropology, as well as topical areas which have been central to the development of the field. Prereq: Graduate Standing in Anthropology.

ANTH 481. Medical Anthropology and Global Health II. 3 Units.
The second in a sequence of two graduate core courses in medical anthropology and global health. This course focuses on the application of medical anthropology theory and methods to the study of global health. Recommended preparation: ANTH 480. Prereq: Graduate Standing in Anthropology.

ANTH 482. Anthropological and Ecological Perspectives on Preserving and Restoring the Natural World. 3 Units.
Now that the environmentally deleterious effects of modern Western culture on the natural world have reached major proportions it has become crucial to explore innovative solutions to this dilemma. In this course novel perspectives derived from the intersection of anthropology and ecology are discussed. The primary perspective focused upon is the understanding that human culture and the natural world in which it is embedded are essentially communicative, or semiotic processes, which thrive upon diverse interaction and feedback. Preserving and restoring the Natural World thus shifts from protecting individual species and particular cultural practices to enhancing the communicative matrix of life and multiple cultural views of the environment. Through this understanding, students will learn to apply a more elegant, effective, and aesthetically pleasing perspective to the challenging environmental issues facing our contemporary world. An in-depth examination of the North American Prairie, along with a comparison of influences on the landscape by indigenous and modern Western Culture will serve as the particular region of focus. Offered as ANTH 382 and ANTH 482. Counts as SAGES Departmental Seminar.

ANTH 485. Applied Anthropology. 3 Units.
This class will provide students with an overview of how anthropologists put theories, methods, and findings to use in addressing social issues and problems. Applied projects presented will span a diverse range of topics and fields, including: healthcare and medicine, nutrition, international development, displacement of populations, education, as well projects from business and industry. Class discussion will address orientations of and advantages in applied approaches, as well the ethical questions such projects often encounter. Offered as ANTH 385 and ANTH 485.

ANTH 487. Anthropology of Body Image. 3 Units.
The study of body image is an increasingly investigated area in anthropology. Theoretically and methodologically, it is particularly interesting due to the combination of cultural and biological perspectives in its investigation as well as due to the contemporary focus on globalization. This field of study also includes interdisciplinary perspectives from psychology, psychiatry, neuroscience, and other fields. This course first examines the definition and history of the study of body image in cultural anthropology. We examine an overview of how anthropology contributes to the wider field of body image through key texts in cultural, biocultural, and linguistic anthropology. We then turn to a variety of relevant topics in the anthropology of body image including body image development, alternate theoretical conceptions of body image, gender and globalization in body image, media and body image, body image and eating disorders, and obesity. Throughout the course, particular attention will be paid to methodology. Students will be responsible for one presentation throughout the course as well as multiple in-class and take home essay assignments. By the end of the course, students should have an excellent understanding of the available literature in the field, have a command of the extant literature, understand relevant methods for various types of research projects and questions, and be able to pose interesting and relevant research questions themselves for future study. Offered as ANTH 387 and ANTH 487.

ANTH 488. Globalization, Development and Underdevelopment: Anthropological Perspective. 3 Units.
This course examines both theoretical and practical perspectives on globalization and economic development in the “Third World.” From “Dependency,” “Modernization,” and “World System” theory to post-structuralist critiques of development discourse, the class seeks to provide a framework for understanding current debates on development and globalization. The “neoliberal monologue” that dominates the contemporary development enterprise is critically examined in the context of growing global inequality. Special consideration is given to the roles of international agencies such as the World Bank, International Monetary Fund, United Nations, and non-governmental organizations (NGOs) in the “development industry.” The course also focuses on the contribution of anthropologists to development theory and practice with emphasis on the impact of development on the health of the poor and survival of indigenous cultures. Opportunities for professional anthropologists in the development field are reviewed. Offered as ANTH 388 and ANTH 488.

ANTH 494. Seminar in Evolutionary Biology. 3 Units.
This seminar investigates 20th-century evolutionary theory, especially the Modern Evolutionary synthesis and subsequent expansions of and challenges to that synthesis. The course encompasses the multidisciplinary nature of the science of evolution, demonstrating how disciplinary background influences practitioners’ conceptualizations of pattern and process. This course emphasizes practical writing and research skills, including formulation of testable theses, grant proposal techniques, and the implementation of original research using the facilities on campus and at the Cleveland Museum of Natural History. Offered as ANTH 394, BIOL 394, EEPS 394, HSTY 394, PHIL 394, ANTH 494, BIOL 494, EEPS 494, HSTY 494, and PHIL 494.

ANTH 495. Research Practicum in Medical Anthropology and Global Health. 3 Units.
This course prepares selected Anthropology graduate students for research in medical anthropology and global health in both local and global settings, with the goal of enhancing the research skills of students early in their graduate careers. Prereq: Graduate standing in Anthropology.
ANTH 502. Research Practicum in Med Anthropology and Cross-cultural Gerontology. 3 Units.
Provides M.A. students with firsthand experience in applying anthropology to health and aging problems. Prereq: Graduate standing.

ANTH 503. Seminar in Social Cultural Anthropology. 3 Units.

ANTH 504. Anthropological Research Design. 3 Units.
Practical and theoretical issues in the selection of questions for health and aging research in societal settings. Illustration of frameworks and designs for research. Discussion of the problems of collection, analysis, and interpretation of data along with the nonscientific influences on the research process and the use of results. Prereq: Graduate standing in anthropology.

ANTH 507. Seminar in Controversial Issues in Anthropology. 3 Units.
The goals of this course are to provide students with opportunities to: (1) Familiarize themselves with the (alleged) facts of various controversial issues that have characterized the field of anthropology over the past 50 years; (2) enhance their skills in analyzing and assessing the nature and quality of the arguments and empirical data employed by parties to the controversies; (3) develop an appreciation of the role of historical and political contexts in shaping the emergence and evolution of the controversies; and (4) consider the ethics involved in the practice and public representation of anthropology. Prereq: ANTH 480 and ANTH 481.

ANTH 510. Seminar in International Health. 3 Units.
This seminar will survey the major areas of research in the field of international health, including anthropology and public health research in international health. Emphasis will be on critical evaluation of current international health theory and methods and review of relevant literature, in regard to the health of the world's population. Prereq: ANTH 480 and ANTH 481.

ANTH 511. Seminar in Anthropology and Global Health: Topics. 3 Units.
This course examines the current issues in global health and the emerging anthropological paradigm directed at global health issues. The objective of the course is to provide graduate students in medical anthropology an in-depth examination of global health from several perspectives. The course will feature perspectives from anthropologists as well as others working in the fields of global health. Prereq: Graduate standing in Anthropology.

ANTH 513. Seminar in Ethnopsychiatry. 3 Units.
Theory and practice of psychotherapeutic forms. Diagnostic and therapeutic forms from Europe, the United States, Japan, India, and other major cultural traditions and those of local areas such as West Africa, Native America, and Latin America. The cultural theories of mental disorders, related conceptions of self and person, and the relationships of local psychological theory to clinical praxis and outcome.

ANTH 519. Seminar in Human Ecology and Adaptability. 3 Units.

ANTH 530. Seminar in Medical Anthropology: Topics. 3 Units.
Various topics will be offered for graduate students in medical anthropology, such as “Anthropological Perspectives on Women’s Health and Reproduction” and “Biocultural Anthropology.” Prereq: ANTH 480.

ANTH 591. Seminar in Physical Anthropology. 3 Units.

(Credit as arranged.) Advanced studies in anthropology.

ANTH 601. Independent Research. 1 - 18 Unit.
(Credit as arranged.)

ANTH 651. Thesis M.A.. 1 - 18 Unit.

ANTH 701. Dissertation Ph.D.. 1 - 9 Unit.
(Credit as arranged.) Prereq: Predoctoral research consent or advanced to Ph.D. candidacy milestone.

Department of Art History and Art

The Department of Art History and Art (http://www.case.edu/artsci/arth/arth.html) offers opportunities to study art history, to engage in pre-professional museum training, to participate in a broad range of studio offerings, and to pursue state teacher licensure in art education. The Bachelor of Arts degree is granted in art history and in pre-architecture (second major only), and the Bachelor of Science degree in art education. The department offers graduate programs leading to the degrees of Doctor of Philosophy in art history, Master of Arts in art history, Master of Arts in art history and museum studies, and Master of Arts in art education. In conjunction with the School of Law, the department also offers a combined JD/Master of Arts in art history and museum studies. Qualified undergraduates majoring in art history or art education may participate in the Integrated Graduate Studies Program.

All art programs are considerably enhanced by close cooperation with cultural institutions located in University Circle, in particular the Cleveland Museum of Art, the Cleveland Institute of Art, and the Museum of Contemporary Art (MOCA). The newly founded Nancy and Joseph Keithley Institute for Art History, created jointly with the Cleveland Museum of Art, will promote art historical studies through graduate fellowship support, collections-based graduate seminars, travel and research funding, undergraduate internship funding, and joint programming with the Cleveland Museum of Art.

Art History Program

Students majoring in art history have a wide variety of career opportunities. Graduates with a strong background in art history are employed as college and university professors; as museum professionals (in curatorial, educational, and administrative positions); as art librarians and archivists; as development officers; as journalists; as art gallery or auction house staff members; as art conservators and restorers; as art specialists in the diplomatic service and at all levels of government; and in other careers in industry, film, and television. Some of these specialties require additional study and professional preparation beyond the bachelor’s degree. Other art history majors who have fulfilled the required prerequisites go on to attend law, medical, or business school.

The graduate programs in art history are offered as part of the joint program in art history of Case Western Reserve University and the Cleveland Museum of Art. Most classes, undergraduate and graduate level, are held in the museum, and some courses are offered or co-taught by museum curators who hold adjunct appointments in the department. Students taking advanced-level courses use the museum’s extensive research library, and all students have an opportunity to study original works of art in the museum’s superb collections.

Art Education Program

The Art Education Program’s mission is “to prepare proactive, scholar-practitioner art educators who will develop into leaders, teachers, and talented artists in the field of art education.”

The undergraduate and graduate degree programs in art education are offered in conjunction with the Cleveland Institute of Art. Art education majors have the advantage of pursuing their academic studies in a university environment and their studio studies at a professional art
This major requires 36 hours of course work in art history, including:

- Bachelor of Arts in Art History

Graduates of the Art Education Program have pursued careers as teachers, supervisors, and consultants in public and private schools, colleges, art schools, and museums; as administrators of galleries and art organizations; as designers of educational programs for industry; and as practicing artists. The program is especially proud of its record in recruiting and graduating students from diverse backgrounds.

The program offers pre-architecture as a second major and as a minor for students who expect to continue architectural studies at the graduate level or who simply wish to pursue an area of interest. For students seeking to develop and nurture their artistic and creative talents, the program offers a variety of introductory and intermediate art studio courses, taught by experienced artists/teachers.

**Art Studio Program**

The Art Studio Program offers a variety of art courses that can be taken for personal enjoyment to gain experience in a variety of art media. Courses in drawing, painting, design, ceramics, enameling and jewelry, textiles, photography, digital media, and architecture are taught at various skill levels by experienced, professional artists. These courses can be taken as university electives to fulfill minors in art studio, photography, or architecture, or to complete a second major in pre-architecture. At the end of each semester, there is an comprehensive exhibition of student work in the Art Gallery.

BA Art History (p. 23) | BS Art Education (p. 23) | BA Pre-Architecture (p. 24) | Minors (p. 25)

**Undergraduate Programs**

The art history curriculum is designed to give students a broad grounding in a variety of artistic media with a strong emphasis on understanding the cultural context in which they were produced. Students develop technical and critical vocabularies as well as sound writing skills to analyze works of art. Study of and research on works of art in the Cleveland Museum of Art is an essential component of the undergraduate curriculum. Internships for credit or with volunteer status are available at the Cleveland Museum of Art, the Museum of Contemporary Art, and other arts institutions in University Circle.

Integrated Graduate Studies Program. Qualified undergraduates majoring in art history or art education may also participate in the Integrated Graduate Studies Program (http://bulletin.case.edu/undergraduatestudies/gradprofessional/#accelerationtowardgraduatedegreestext). Interested students should note the general requirements and the admission procedures in this bulletin and may consult the department for further information. The GRE is required for all students applying to the IGS program in art history.

**Majors**

**Bachelor of Arts in Art History**

This major requires 36 hours of course work in art history, including:

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>ARTH 101</td>
<td>Art History I: Pyramids to Pagodas</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 102</td>
<td>Art History II: Michelangelo to Maya Lin</td>
<td>3</td>
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<tr>
<td>Art History 200-level courses</td>
<td>3-6</td>
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</tr>
<tr>
<td>ARTH 396</td>
<td>Majors Seminar</td>
<td>3</td>
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Art History electives at the 300 level 15-18
Art Studio courses 3-6

Foreign language study (French, German, or Italian) is highly recommended.

**Departmental Honors.** Majors who wish to earn the Bachelor of Arts degree with honors in art history must make written application to the department chair no later than the fall semester of their senior year. Departmental honors are awarded upon fulfillment of the following requirements: a grade point average of at least 3.5 in the major and an A in ARTH 399 Honors Thesis.

**Bachelor of Science in Art Education**

The Bachelor of Science in art education requires a total of 124 credits and is designed to educate professional teachers of art for the public and private schools who are also competent, creative artists. The program meets the requirements of the Ohio Board of Education to qualify its university-recommended students for Pre-K-12 Visual Art Specialist Licensure to teach art in the public schools of Ohio and more than 40 reciprocating states.

This program is conducted jointly by Case Western Reserve University and the Cleveland Institute of Art. Admission requires application to Case Western Reserve and submission of an art portfolio to the Cleveland Institute of Art. Credentials must be acceptable to both institutions. Academic work is taken at Case Western Reserve, and the majority of art studio courses at the Cleveland Institute of Art, as follows:

**Academic Courses at Case Western Reserve University**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>SAGES (First Seminar)</td>
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<td>4</td>
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<td>Two of the following:</td>
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<td>6</td>
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<tr>
<td>USNA Thinking About Natural and Technological World</td>
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<td>USSO Thinking about the Social World</td>
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<td>USSY Thinking about the Symbolic World</td>
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<td>Natural Sciences</td>
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<td>Quantitative Reasoning (MATH or STAT)</td>
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<tr>
<td>Global &amp; Cultural Diversity</td>
<td></td>
<td>3</td>
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<tr>
<td>ARTH 101 Art History I: Pyramids to Pagodas</td>
<td></td>
<td>3</td>
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<tr>
<td>ARTH 102 Art History II: Michelangelo to Maya Lin</td>
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<tr>
<td>ARTH Electives (one must be at 300 level)</td>
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<td>6</td>
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<tr>
<td>PHED Physical Education (2 semesters)</td>
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<tr>
<td><strong>Total Units</strong></td>
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<td>31</td>
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**Professional Education/Art Education**

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>ARTS 295</td>
<td>Introduction to Art Education</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 300</td>
<td>Current Issues in Art Education</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 385</td>
<td>Clinical/Field Based Experience I</td>
<td>1</td>
</tr>
<tr>
<td>ARTS 386</td>
<td>Clinical/Field Based Experience II</td>
<td>1</td>
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<tr>
<td>ARTS 387</td>
<td>Clinical/Field Based Experience III</td>
<td>1</td>
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<tr>
<td>ARTS 393</td>
<td>Art Content, Pedagogy, Methodology, and Assessment</td>
<td>3</td>
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<tr>
<td>ARTS 366A</td>
<td>Student Teaching in Art: Pre-K - 6th Grade</td>
<td>4</td>
</tr>
<tr>
<td>ARTS 366B</td>
<td>Student Teaching in Art: 7th - 12th Grade</td>
<td>4</td>
</tr>
<tr>
<td>ARTS 465</td>
<td>Seminar for Art Teachers</td>
<td>4</td>
</tr>
<tr>
<td>EDUC 301</td>
<td>Introduction to Education</td>
<td>3</td>
</tr>
</tbody>
</table>
requires: junior year and the fall semester after Decision Point 1. The application
The Application for Advanced Standing should be submitted by the
Decision Point 2: Application for Advanced Standing
requires:
ARTS 295 Introduction to Art Education. Admission to the program
end of the fall semester of the sophomore year after a student completes
Official admission to the Art Education Program generally occurs at the
Decision Point 1: Application for Admission to the Program
in unconditional admission; or denial of admission. Denial of admission at
any decision point means the student is no longer able to pursue an art
in education degree at Case Western Reserve.

Decision Point 1: Application for Admission to the Program
Official admission to the Art Education Program generally occurs at the
end of the fall semester of the sophomore year after a student completes
ARTS 295 Introduction to Art Education. Admission to the program requires:
1. being accepted to the university
2. being accepted as an art major through a portfolio review before matriculation
3. successful completion of ARTS 295 Introduction to Art Education, including evaluation of an initial Teaching ePortfolio
4. cumulative Case GPA of 2.5 or better
5. submission of a signed Statement of Assurance of Good Moral Character
6. a satisfactory interview with art education faculty, documented on the Teacher Licensure Admission Assessment Form

Decision Point 2: Application for Advanced Standing
The Application for Advanced Standing should be submitted by the
junior year and the fall semester after Decision Point 1. The application
requires:
1. a successful review of the updated Teaching ePortfolio
2. submission of a current DPR form documenting the following: a cumulative GPA of 2.5 or better, an art course GPA of 2.5 or better, and an education GPA of 3.0 or better
3. a passing score on the Candidate Disposition Assessment Inventory, completed by the art education faculty

Retention and Advanced Standing (Undergraduate Level)
The Bachelor of Science program in art education is designed to educate professional teachers of art. There are four decision points in the program, and for each of these decision points, there are three possible outcomes: unconditional admission; conditional admission with a prescribed remedial plan which when successfully completed will result in unconditional admission; or denial of admission. Denial of admission at any decision point means the student is no longer able to pursue an art education degree at Case Western Reserve.

Decision Point 3: Application for Student Teaching
The Application for Student Teaching should be completed by week 8 of the semester prior to student teaching. The application requires:
1. a successful review of the updated Teaching ePortfolio
2. submission of a current DPR form documenting the following: a cumulative GPA of 2.5 or better, an art course GPA of 2.5 or better, and an education GPA of 3.0 or better
3. a passing score on the Candidate Disposition Assessment Inventory, completed by the art education faculty
4. passing a TB test
5. presenting documentation of Hepatitis B vaccination
6. passing official Federal and State criminal background checks

Decision Point 4: Application for Initial Licensure
Application for Initial Licensure occurs after successful completion of all degree requirements. The application requires:
1. a successful review of the completed Teaching ePortfolio
2. submission of a current DPR form documenting the following: a cumulative GPA of 2.5 or better, an art course GPA of 2.5 or better, and an education GPA of 3.0 or better
3. a passing score on the Candidate Disposition Assessment Inventory, completed by the art education faculty
4. achievement of state-mandated scores on the two Praxis II national teacher exams
5. completion of the Case Student Teaching Final Assessment by the cooperating teacher and university supervisor with a grade of B or better
6. completion of the Case Teacher Licensure Exit Interview and Survey

After successfully completing all requirements at the four decision points, the student is recommended by the university’s director of teacher education for the Ohio Visual Art (Pre-K-12) License. Completion of the Bachelor of Science in art education does not ensure that the State of Ohio’s Visual Art Teacher License will be awarded. Teacher licensure is also obtainable through the Art Education Graduate Program of Study.

Additional information on this program is available in the office of the director of art education.

Bachelor of Arts in Pre-Architecture
The Pre-Architecture Program introduces the student to the forms, history, and functions of architecture as well as to the studio skills relevant to its practice. The program is designed to provide a background for undergraduate students who plan to continue architectural studies at the graduate level, as well as for those interested in the study of architecture as part of a liberal or technical education.

Pre-architecture may be chosen only as a second major. The double major is required so that the perspectives provided by this interdisciplinary program may be complemented by a concentrated disciplinary experience. For a student who completes a Bachelor of Science degree (BS, BSE, or BSN), pre-architecture may serve as the sole major for a BA degree.

To declare a pre-architecture major, students should have declared a first major and have sophomore or junior standing. Up to 6 credits in general

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSCL 101</td>
<td>General Psychology I</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 304</td>
<td>Educational Psychology</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 255</td>
<td>Literacy Across the Content Areas</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 386</td>
<td>Introduction to Instructional Technology</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Units: 39

Art Studio Courses at the Cleveland Institute of Art

Digital Art and Design                                | 6     |
Design 2D and 3D                                      | 6     |
Drawing I, II, III                                    | 9     |
Painting ARTS 216 and CIA Color                       | 6     |
2D Visualization                                      | 3     |
Studio Project                                        | 3     |
Sculpture                                             | 3     |
Studio Electives                                      | 15    |

Total Units: 51

Bachelor of Arts in Pre-Architecture
education requirements and elective courses taken by students for their first major may be applied to their pre-architecture major.

The major consists of a minimum of 30 credit hours, 15 of which are in required courses and the remainder of which are approved elective courses. Detailed information about approved electives is available in the departmental office.

The required courses are:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTH 101</td>
<td>Art History I: Pyramids to Pagodas</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 102</td>
<td>Art History II: Michelangelo to Maya Lin</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 106</td>
<td>Creative Drawing I</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 302</td>
<td>Architecture and City Design I</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 303</td>
<td>Architecture and City Design II</td>
<td>3</td>
</tr>
</tbody>
</table>

Art history courses 6

Two of the following: 6

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTS 101</td>
<td>Design and Color I</td>
<td></td>
</tr>
<tr>
<td>ARTS 201</td>
<td>Design and Color II</td>
<td></td>
</tr>
<tr>
<td>ARTS 206</td>
<td>Creative Drawing II</td>
<td></td>
</tr>
<tr>
<td>ARTS 220</td>
<td>Photography Studio I</td>
<td></td>
</tr>
<tr>
<td>THTR 223</td>
<td>Introduction to Scenic Design</td>
<td></td>
</tr>
<tr>
<td>THTR 224</td>
<td>Introduction to Lighting Design</td>
<td></td>
</tr>
</tbody>
</table>

One of the following: 3

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 125</td>
<td>Math and Calculus Applications for Life, Managerial, and Social Sci I</td>
<td></td>
</tr>
<tr>
<td>MATH 126</td>
<td>Math and Calculus Applications for Life, Managerial, and Social Sci II</td>
<td></td>
</tr>
<tr>
<td>PHYS 115</td>
<td>Introductory Physics I</td>
<td></td>
</tr>
<tr>
<td>PHYS 116</td>
<td>Introductory Physics II</td>
<td></td>
</tr>
<tr>
<td>PHYS 121</td>
<td>General Physics I - Mechanics</td>
<td></td>
</tr>
<tr>
<td>PHYS 122</td>
<td>General Physics II - Electricity and Magnetism</td>
<td></td>
</tr>
</tbody>
</table>

Total Units 30

For students whose interests lie in aesthetics and the history of architecture, the required 3 hours may be in sociology, American studies, anthropology, history (specifically courses on the history of science and technology), civil engineering, or earth, environmental, and planetary sciences.

Minors

Four minors, each requiring 18 credit hours, are available: one in art history, and three through the Art Studio Program.

Art History

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTH 101</td>
<td>Art History I: Pyramids to Pagodas</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 102</td>
<td>Art History II: Michelangelo to Maya Lin</td>
<td>3</td>
</tr>
<tr>
<td>Art History electives (at least 3 hours must be taken at the 200 level)</td>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>

Total Units 18

Art Studio

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTS 101</td>
<td>Design and Color I</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 106</td>
<td>Creative Drawing I</td>
<td>3</td>
</tr>
</tbody>
</table>

Four additional studio courses, two of which must be in the same area (i.e., drawing, painting, design, textiles, photography, ceramics and enameling)

Total Units 18

Photography

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTS 220</td>
<td>Photography Studio I</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 320</td>
<td>Photography Studio II</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 322</td>
<td>Digital Photography I</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 325</td>
<td>Creative Photography</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 365D</td>
<td>B&amp;W Photography Studio</td>
<td></td>
</tr>
<tr>
<td>ARTS 365E</td>
<td>Color Studio</td>
<td></td>
</tr>
<tr>
<td>One of the following: 3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTS 399</td>
<td>Independent Study in Art Studio</td>
<td></td>
</tr>
<tr>
<td>ARTH 102</td>
<td>Art History II: Michelangelo to Maya Lin</td>
<td></td>
</tr>
<tr>
<td>ARTS 350</td>
<td>Multimedia I</td>
<td></td>
</tr>
</tbody>
</table>

Total Units 18

Pre-Architecture

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTH 101</td>
<td>Art History I: Pyramids to Pagodas</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 102</td>
<td>Art History II: Michelangelo to Maya Lin</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 106</td>
<td>Creative Drawing I</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 302</td>
<td>Architecture and City Design I</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 303</td>
<td>Architecture and City Design II</td>
<td>3</td>
</tr>
<tr>
<td>One approved elective (the following are recommended): 3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTS 304</td>
<td>Architecture and City Design III</td>
<td></td>
</tr>
<tr>
<td>ARTS 350</td>
<td>Multimedia I</td>
<td></td>
</tr>
</tbody>
</table>

Total Units 18

Graduate Programs

Doctor of Philosophy in Art History

The doctoral program in art history, offered in collaboration with the Cleveland Museum of Art, provides an object-focused grounding for museum or academic careers. A BA or MA in art history and reading knowledge of one approved foreign language (such as French, German, Italian, Japanese, or Chinese) are required prerequisites. Admission preference is given to applicants whose scholarly interests coincide with the interests of a department faculty member, those who wish to focus on distinctive holdings in the collection of the Cleveland Museum of Art, and/or those planning to pursue topics in museum or collecting history or the history of the art market. Admission to the program is made on the basis of academic record and scholarly promise, recommendations, experience, and personal interviews. Applicants must also submit GRE scores and two art history research papers. Students whose MA was awarded more than five years prior to application for admission may be required to pass a qualifying examination and/or foreign language examination administered by the department before being admitted to full standing in the PhD program.

Required courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTH 495</td>
<td>Methodologies of Art History</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 496</td>
<td>Materials, Methods, and Physical Examination of Works of Art</td>
<td></td>
</tr>
</tbody>
</table>

Four graduate seminars at the 500 level. At least one seminar must be collection-based.
Doctoral students must demonstrate an ability to read two approved languages other than English useful in art historical research. The general examination cannot be taken until the language requirement is fulfilled either through course work or successfully passing language reading examinations.

Doctoral students are required to pass an oral examination of major and minor fields and a written examination in the form of a research paper of 20-30 pages in length. The topic for the research paper will be set by the examination committee after the oral examination is held; the paper will be due two weeks after the student picks up the assigned topic. A final evaluation will be based on the student’s performance in both the written and oral sections of the general examination.

Master of Arts in Art History

The MA program in art history is designed to provide the student with a broad knowledge of the major art historical periods, the scholarly and bibliographical resources, and the methodologies of art history. It also offers an opportunity to investigate art historical problems in some depth. In addition to the regular graduate school application form, applicants to the graduate program in art history are required to submit GRE scores and copies of two research papers that they consider to represent their best work. Applicants for the MA should have a BA major or minor concentration in art history or a related humanities field and a minimum GPA of 3.5. All applicants whose native language is not English, or who have not received a degree from an English-speaking university, must take the Test of English as a Foreign Language (TOEFL); the required minimum score is 100 if Internet-based.

The requirements include:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTH 495</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 490A</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 490B</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 491A</td>
<td>1</td>
</tr>
<tr>
<td>ARTH 491B</td>
<td>3</td>
</tr>
<tr>
<td>Six graduate courses at the 400 level or above, three of which must be seminars on the 500 level.</td>
<td>18</td>
</tr>
</tbody>
</table>

A reading knowledge of one foreign language (normally French, German, or Italian)

Successful performance on the MA comprehensive examination

Total Units 31

JD/MA in Art History and Museum Studies

The School of Law at Case Western Reserve University prepares JD students to practice law in, among other areas, the fields of intellectual property and law and the arts. The MA in Art History and Museum Studies program, coordinated by the Department of Art History and Art and the Cleveland Museum of Art, is designed to provide students with a broad knowledge of the major art historical periods, of the historiography and critical methodologies of art history, and of museological practice and history, connoisseurship, conservation, and interpretation, through course work and museum internships. The dual degree program prepares students to participate in the fields of intellectual property and law and the visual arts and provides students with an opportunity to develop expertise in areas of substantive interest.

The School of Law requires 88 credit hours of coursework, including 36 hours of required courses and an upper-class writing requirement, for the JD degree. Most of the requirements are completed during the first year of the law program, which includes:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAWS 1202</td>
<td>4</td>
</tr>
<tr>
<td>LAWS 1201</td>
<td>4</td>
</tr>
<tr>
<td>LAWS 1101</td>
<td>4</td>
</tr>
<tr>
<td>LAWS 1102</td>
<td>4</td>
</tr>
<tr>
<td>LAWS 1103</td>
<td>4</td>
</tr>
<tr>
<td>LAWS 1203</td>
<td>4</td>
</tr>
<tr>
<td>LAWS 1801</td>
<td>4</td>
</tr>
<tr>
<td>LAWS 1802</td>
<td>4</td>
</tr>
</tbody>
</table>

In addition to the 31 credits of first-year courses, JD students must complete LAWS 2001 Professional Responsibility and LAWS 2803 Legal Writing, Leadership, Experiential Learning, Advocacy, and Professionalism 3: Advanced Skills during their second year of study. Students must also fulfill an upper-class writing requirement (through participation in one of

| Elective from approved list of perspective courses | 2 |

Master of Arts in Art History and Museum Studies

The MA program in art history and museum studies includes the same broad requirements and objectives of the MA program in art history, along with a year-long museum studies course and two supervised museum internships. In addition to the regular graduate school application form, applicants to the graduate program in art history are required to submit GRE scores and copies of two research papers that they consider to represent their best work. Applicants for the MA should have a BA
several law journals, completion of a 2-credit supervised research project, or completion of an approved writing requirement seminar or lab).

Students in the MA program in art history and museum studies must complete 31 hours of graduate credit, nine hours of which must be taken in the Law School, to satisfy the requirements for the dual JD/MA degree. In addition, students in the MA program must demonstrate a reading knowledge of one approved modern language other than English. They must also take the MA comprehensive examination at the conclusion of their art history studies.

The thirty-one hours of course work must be taken at the 400 level or higher, and be distributed as follows:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTH 490A</td>
<td>Visual Arts and Museums I</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 490B</td>
<td>Visual Arts and Museums: II</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 491A</td>
<td>Visual Arts and Museums: Internship</td>
<td>1</td>
</tr>
<tr>
<td>ARTH 491B</td>
<td>Visual Arts and Museums: Internship</td>
<td>3</td>
</tr>
<tr>
<td>ARTH 495</td>
<td>Methodologies of Art History</td>
<td>3</td>
</tr>
</tbody>
</table>

One course in each of the three following areas:

- Pre-Modern (pre-1800)
- Modern (post-1800)
- Non-Western

Relevant Law School courses

- Three of the courses in these two categories must be seminars.

The dual degree program requires students to complete 98 credit hours. Law students enrolled in the dual degree program may earn up to 12 credit hours toward the JD in graduate level art history courses with the approval of the Associate Dean for Academic Affairs in advance of enrollment. Credit will not be given for work done in such courses before the student completes the first year of law school. Dual degree students would be required to complete 22 credit hours toward the MA. Nine hours of law school coursework will count toward the 31 hours required for the MA in Art History and Museum Studies. The Department of Art History and Art liaison must approve the law school courses that will count toward the MA.

Dual degree students generally begin study in the law school and defer enrollment in the MA program until their second year. (There may be exceptions to this general rule. In certain cases, for example, students may be permitted to take one course in the art history department during the second semester of the first year of law school.) Students interested in completing the dual degree should consult both programs early in the process to avoid difficulties. After the first year of law school, students may enroll in law courses or art history courses; the program will not require students to complete a specific “core” in a “dedicated” semester in the Department of Art History and Art. Completion of the dual degree program will take at least seven semesters, or three-and-a-half years of coursework.

Year 1: First-year law school curriculum. (31 hours)

Year 2, 3 & 4: Mixture of courses between the two units, including 22 hours of coursework in the art history program and the MA comprehensive examination.

Credit Hour Requirements

- Total Hours in the School of Law: 76
- Total Hours in the art history department: 22

Dual Degree Student Advising System

Dual degree students are advised by the Associate Dean for Academic Affairs at the School of Law. In addition, dual degree students are granted priority registration for upper class courses, ensuring that they will be able to accommodate their scheduling needs in obtaining needed classes. In the Department of Art History and Art, dual degree students will be advised by the art history department liaison and the director of graduate studies.

Admissions

Students wishing to enroll in the dual degree program must be separately admitted to each program. The Department of Art History and Art will waive the GRE requirement for admission to the MA program and use the LSAT in the admissions process. Applicants can apply to the dual degree program when they apply to the School of Law or after the first year of enrollment in the School of Law. Once students have been admitted, they will consult with the Associate Dean for Academic Affairs at the School of Law and the Department of Art History and Art liaison to determine their appropriate course of study.

Master of Arts in Art Education

The Master of Arts in Art Education is offered in two plans: Plan I for those who already hold teacher licenses and who desire advanced studio- and art-related studies; Plan II for those holding the Bachelor of Fine Arts or equivalent degree who desire multi-age teacher licensure as visual art specialists. Both programs are offered jointly by Case Western Reserve University and the Cleveland Institute of Art, and both require 36 semester hours.

The admission procedure includes an online application, three letters of recommendation, a college transcript, which are to be submitted to the Art Education office, and an interview with the program director in which students show a portfolio of artwork and discuss their program of study. For students pursuing Plan I, the Cleveland Institute of Art admission procedure requires a portfolio. Approval by both the University and the Cleveland Institute of Art is required for admission into Plan I. Information and application forms are available online through the Office of Graduate Admission at Case Western Reserve University.

Plan I

- 18 hours in studio to be taken at the Cleveland Institute of Art or Case Western Reserve University at the 300 level or above; and 18 hours in academic courses to be taken at Case Western Reserve University at the 400 level or above, to be selected in consultation with the director of art education; or
- 30 semester hours of course credit: 18 hours in studio to be taken at the Cleveland Institute of Art at the 300 level or above; and 12 hours in academic courses to be taken at Case Western Reserve University at the 400 level or above, to be selected in consultation with the director of art education; AND a thesis exhibition based on individual research (not less than 6 semester hours of registration).

Plan II

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDUC 401</td>
<td>Introduction to Education</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 404</td>
<td>Educational Psychology</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 486</td>
<td>Introduction to Instructional Technology</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 385</td>
<td>Clinical/Field Based Experience I</td>
<td>1</td>
</tr>
</tbody>
</table>
The Master’s Plan II Program in Art Education is designed to educate professional teachers of art. There are four decision points in the Art Education Program. For each of the decision points, there are three possible outcomes: unconditional admission; conditional admission with a prescribed remedial plan which when successfully completed will result in unconditional admission; or denial of admission. Denial of admission at any decision point means the student is no longer able to pursue an art education degree at Case Western Reserve University.

Decision Point 1: Application for Admission to the Program

Application for admission to the program requires:

1. being accepted to the university
2. being accepted as an art major through an art portfolio review
3. submission of a signed Statement of Assurance of Good Moral Character
4. a satisfactory interview with art education faculty, documented on the Teacher Licensure Admission Assessment Form

Decision Point 2: Application for Advanced Standing

Application for advanced standing requires:

1. a successful review of the updated Teaching ePortfolio
2. submission of a current transcript documenting the following: a cumulative GPA of 3.0 or better, an art course GPA of 3.0 or better, and an education GPA of 3.0 or better
3. a passing score on the Candidate Disposition Assessment Inventory, completed by the art education faculty at the end of the first semester

Decision Point 3: Application for Student Teaching

Application for student teaching requires:

1. a successful review of the updated Teaching ePortfolio
2. submission of a current transcript documenting the following: a cumulative GPA of 3.0 or better, an art course GPA of 3.0 or better, and an education GPA of 3.0 or better
3. a passing score on the Candidate Disposition Assessment Inventory, completed by the art education faculty
4. passing a TB test
5. presenting documentation of Hepatitis B vaccination
6. passing official Federal and state criminal background checks

Decision Point 4: Application for Initial Licensure

Application for initial licensure occurs after successful completion of all degree requirements. The application requires:

1. a successful review of the updated Teaching ePortfolio
2. submission of a current final transcript documenting the following: a cumulative GPA of 3.0 or better, an art course GPA of 3.0 or better, and an education GPA of 3.0 or better
3. a passing score on the Candidate Disposition Assessment Inventory, completed by the art education faculty
4. achievement of state-mandated scores on the two Ohio Assessments for Educators exams
5. completion of the Case Student Teaching Final Assessment by the cooperating teacher and university supervisor with a grade of B or better
6. completion of the Case Teacher Licensure Exit Interview and Survey

After successfully completing all requirements at the four decision points, the student is recommended by the university’s director of teacher education for the Ohio Provisional Art (Pre-K-12) License. Completion of the Master’s Plan II Program in Art Education degree does not ensure that the State of Ohio’s Provisional Visual Art Teacher License will be awarded.
Visiting Faculty
Heather Galloway, Certificate in Conservation; MA in Art History
(Conservation Center, Institute of Fine Arts, New York University;
Williams College Graduate Program in the History of Art)
Visiting Assistant Professor
José Teixeira, MFA
(University of California, Los Angeles)
Champney Family Visiting Professor

Secondary Faculty
Miriam R. Levin, PhD
(University of Massachusetts)
Professor, Department of History

Adjunct Faculty from the Cleveland Museum of Art
Louis Adrean, MLS
(Syracuse University)
Adjunct Instructor
Library Instruction
Michael Bennett, PhD
(Harvard University)
Curator, Greek and Roman Art
Susan Bergh, PhD
(Columbia University)
Curator, Art of the Ancient Americas
Christine Edmonson, BA
(University of Delaware)
Adjunct Instructor
Library Instruction
Jane Glaubinger, PhD
(Case Western Reserve University)
Curator of Prints
Heather Lemondes, PhD
(The Graduate School and University Center, City University of New York)
Associate Curator of Drawings
Constantine Petridis, PhD
(Ghent University)
Curator, African Art
William Robinson, PhD
(Case Western Reserve University)
Curator, Modern European Art
Barbara Tannenbaum, PhD
(University of Michigan)
Curator of Photography

Marjorie Williams, MA
(University of Michigan)
Senior Director of Endowment Development
Asian art

Art Education
Tim Shuckerow, MA
(Case Western Reserve University)
Director, Art Education and Art Studio Program
Painting, ceramics
David King, MFA
(Kent State University)
Sandra Noble, MA
(Cleveland State University)
Part-time Lecturer and University Supervisor, Elementary Student Teaching and Clinical/Field-Based Experience

Adjunct Art History Faculty
Gary Sampson, PhD
(University of California, Santa Barbara)
Associate Dean, Graduate Studies, Cleveland Institute of Art
History of photography
Holly Witchey, PhD
(Case Western Reserve University)
Adjunct Professor
Museum studies

Art Studio
Tim Shuckerow, MA
(Case Western Reserve University)
Director, Art Education and Art Studio Program
Painting, ceramics
Alexander Aitkin, MFA
(Ohio University)
Full-time Lecturer
Photography, creative photography
Jared Bendis, MA
(Case Western Reserve University)
Adjunct Lecturer
Multimedia
Gail Berg, MA
(Case Western Reserve University)
Part-time Lecturer
Photography
Margaret Fischer, MA
(Case Western Reserve University)
Part-time Lecturer
Enameling and jewelry
JoAnn Giordano, MFA  
(Cranbrook Academy of Art)  
*Part-time Lecturer*  
Weaving, fibers, and textiles  

George Kozmon, BFA  
(Cleveland Institute of Art)  
*Part-time Lecturer*  
Design  

Sally Levine, MA  
(University of Illinois)  
*Part-time Lecturer*  
Architecture  

Martha Lois, MFA  
(Kent State University)  
*Part-time Lecturer*  
Ceramics  

Christopher Pekoc  
*Part-time Lecturer*  
Creative drawing  

Barney Taxel, BA  
(Case Western Reserve University)  
*Part-time Lecturer*  
Digital photography  

## Emeriti  
D. Harvey Buchanan  
*Professor Emeritus of Humanities and Art History and Provost Emeritus*  

Walter S. Gibson  
*Andrew W. Mellon Professor Emeritus of the Humanities*  

Ellen G. Landau  
*Andrew W. Mellon Professor Emerita of the Humanities*  

Edward J. Olszewski  
*Professor Emeritus*  

## ARTH Courses  

**ARTH 101. Art History I: Pyramids to Pagodas. 3 Units.**  
The first half of a two-semester survey of world art highlighting the major monuments of the ancient Mediterranean, medieval Europe, Mesoamerica, Africa, and Asia. Special emphasis on visual analysis, and socio-cultural contexts, and objects in the Cleveland Museum of Art.  

**ARTH 102. Art History II: Michelangelo to Maya Lin. 3 Units.**  
The second half of a two-semester survey of world art highlighting the major monuments of art made in Africa, the Americas, Asia, and Europe from 1400 to the present. Special emphasis on visual analysis, historical and sociocultural contexts, and objects in the Cleveland Museum of Art.  

**ARTH 203. The Arts of Asia. 3 Units.**  
This course surveys a selection of major developments in the arts of Asia from the bronze age to the present in a wide range of media including: sculpture, painting, ceramics, architecture, bronzes, calligraphy, prints and contemporary installations. We explore factors behind the making of works of art, including social, political, religious and personal meanings, while examining the historical contexts for the arts of India, China, Japan, Korea, Cambodia and Thailand. Attention will be paid to the material and stylistic qualities of art as well as art's relationship to the ideas and practices of Buddhism, Hinduism, and Daoism. Visits to the Asian galleries at the Cleveland Museum of Art form an integral part of the course.  

**ARTH 204. Arts of East Asia. 3 Units.**  
A survey of the major developments in the arts of East Asia from the bronze age to the present in a wide range of media, including sculpture, painting, ceramics, architecture, calligraphy, prints, and installations. The course explores factors behind the making of works of art, including social, political and religious meanings, while examining the historical contexts for the arts of China, Japan, and Korea. Attention will be paid to the relationship between art and the ideas and practices of Buddhism, Shinto, Daoism, and Confucianism. Our topics include: secular and sacred narrative scroll painting, ceramics and tea culture, landscape painting, Buddhist cave temples, ancient bronzes, mortuary art, expressions of resistance and reclusion in visual arts, cross-cultural exchanges within the region and with the West, and the role of East Asian artists in the contemporary international art market.  

**ARTH 208. Arts of Japan. 3 Units.**  
This course explores a selection of major developments in Japanese visual and material culture from ancient times to the present day. We consider works in multiple media including paintings, sculpture, calligraphy, ceramics, woodblock prints, architecture, performance art, and installations. We look into the roles of art in society, the relationship of art to political authority, the place of art in religious practice and experience, connections between art and literature, and how art relates to the expression of personal, social, political, and cultural identity. We pay particular attention to tea ceramics, Edo and Meiji period, woodblock prints, Chinese and Euro-American influences on Japanese art, works associated with Buddhist religious practices and ideas such as ink painting, portraiture, and statuary connected with Zen. We also examine the role of museums in selecting, preserving, and presenting Japanese art in the 20th and 21st century. Visits to the Cleveland Museum of Art form an integral part of the course.  

**ARTH 220. Jewish Traditional Art and Architecture. 3 Units.**  
Tradition and transformation in Jewish artistic expression over time and across space. Course will begin with biblical period and continue down to the present day in Israel and America. Examination of how concepts such as "Jewish" and "art" undergo change within the Jewish community over this period. Offered as ARTH 220 and JDST 220.
ARTH 221. Building on Antiquity. 3 Units.
Beginning with Ancient Greece and Rome and ending in Cleveland, the course will provide orientation in the architectural orders and in most periods of European and Euro-American architectural history, as well as, to an extent, architectural criticism. The issue of how architecture has meaning will be central, not least in connection with the formalized "language" of classicism and the emergence of development of building types (temple, museum, civic hall, transportation buildings, etc.). We will also review more subtle ways in which architecture conveys meaning or mood, and the assignment of gendered associations to certain architectural elements. The course will consider more or less blatant political uses of architecture and architectural imagery, but also more elusive and/or ambiguous cases, as well as the phenomenon of the shifting meanings of architecture through changes of era, owner, audience, etc. Offered as ARTH 221 and CLSC 221.

ARTH 222. Greek and Roman Sculpture. 3 Units.
This survey course explores the history of sculpture in ancient Greece and Rome, from the Mycenaean period through the reign of Constantine (A.D. 306-337). Students learn how to analyze works of sculpture in terms of form, function, and iconography. Particular emphasis is placed on situating sculptures within the changing historical, cultural, political, and religious contexts of the classical world, including the Greek city-state, the Hellenistic kingdoms that followed Alexander the Great, the Roman Republic, and the Roman Empire. Students will study a variety of sculptures--such as statues, reliefs, and carved gems--from across the Greek and Roman worlds. As we study sculptures from the classical world, we will consider questions of design, patronage, artistic agency, viewer reception, and cultural identity. We will also consider the cultural interaction between ancient Greece and Rome and what impact this had on the production and appearance of sculpture. Offered as ARTH 226 and CLSC 226.

ARTH 228. Ancient Greek Athletics. 3 Units.
Exploration of the role of athletics in the ancient, primarily Greek world, and their reflection in the art of the period. Offered as ARTH 228 and CLSC 228.

ARTH 230. Ancient Roman Art and Architecture. 3 Units.
This survey course explores the history of Roman art and architecture from Rome's founding in 753 B.C. up through the reign of Constantine (A.D. 306-337). Students learn how to analyze works of art and architecture in terms of form, function, and iconography. Particular emphasis is placed on situating objects and monuments within the changing historical, cultural, political, and religious contexts of ancient Rome, including major changes such as the shift from the Roman Republic to the Roman Empire and the advent of Christianity. Students will study a variety of media--such as statues, painting, metalwork, and domestic and public architecture--from the city of Rome itself as well as Roman provinces as far afield as Asia Minor and North Africa. The course will introduce students to famous buildings such as the Colosseum and the Pantheon but also to lesser known but equally important works. As we study major objects and monuments from ancient Rome, we will consider questions of design, patronage, artistic agency, viewer reception, and cultural identity. We will also consider Rome's complex relationship to Greek culture and attempt to answer the question of what makes Roman art distinctively "Roman." Offered as ARTH 230 and CLSC 230.

ARTH 241. Medieval Art. 3 Units.
This course will introduce students to the pivotal works of art created between approximately 250 and 1500. We will discuss painting, sculpture, architecture, manuscript illumination, and graphic arts. Medieval visual and material culture will be considered within the framework of socio-political developments, rapid urban growth, the flowering of monastic culture, the rise of universities, and changes in devotional practices. While the course will primarily focus on western part of the medieval Christendom, we will also discuss Jewish, Byzantine, and Islamic art. Visits to the CMA will form an integral part of the course.

ARTH 249. The Global Middle Ages: From Paris to Baghdad. 3 Units.
This reading-intensive course will explore the ways in which medieval thought was manifested in Christian and Islamic art, and discuss parallels, divergences, and convergences between the two visual cultures. Topics will include, but will not be limited to, medieval attitudes towards the body as manifested in illuminated manuscripts; art as a tool for religion and a vehicle for devotion; illustrations in herbal and medical books; advances in architecture; literary themes translated into visual art; art created by and for women, and the image as an instrument for political thought and propaganda. While Christian and Islamic visual cultures are traditionally studied separately, this course will examine medieval culture as a whole, thereby providing the students with a distinctive educational experience. Offered as ARTH 249 and HSTY 249.

ARTH 250. Art in the Age of Discovery. 3 Units.
A survey of developments in Renaissance art and architecture in northern Europe and Italy during a new age of science, discovery and exploration, 1400-1600.

ARTH 260. Art in Early Modern Europe. 3 Units.
A survey of European art in the seventeenth and eighteenth centuries, an era of rising nationalism, political aggrandizement, religious expansion and extravagant art patronage. The tensions between naturalism and idealization, court and city, public and private, church and secular patronage, grand commissions and an open air market, will provide themes of the course as we explore what characterized the arts of Austria, Belgium, England, France, Germany, Italy, The Netherlands, and Spain.

ARTH 270. American Art and Culture Before 1900. 3 Units.
Survey of the development of American art from colonial times to the present which explores how art has expressed both American values and American anxieties. Painting is emphasized, but the course also considers architecture, the decorative arts, film, literature, and music. Offered as AMST 270 and ARTH 270.

ARTH 271. American Art and Culture: The Twentieth Century. 3 Units.
Survey of the development of American art from 1900 to the present (and the future) which will explore how art has expressed both American values and American anxieties. Painting will be emphasized, but the course will also consider architecture, the decorative arts, film, literature, and music. Offered as AMST 271 and ARTH 271.
ARTh 274. Nineteenth-Century European Art. 3 Units.
This course will examine the development of European art across the tumultuous long nineteenth century, from the French Revolution in 1789 to the eve of the First World War in 1914. Adopting a thematic, as well as an international approach, this course will seek to interrogate the canonical understanding of this period of dramatic change across France, Britain, Germany, and Spain. We will explore issues of politics, economics, class, gender, imperialism, nationalism, and industrialization that surround the advent of artistic modernity. The class will also consider a range of artistic media, including painting, sculpture, photography, the decorative arts, and architecture, taking advantage of the rich collections of the Cleveland Museum of Art.

ARTh 280. Modern Art and Modern Science. 3 Units.
An examination of the development of painting, sculpture, and architecture from the 19th to the mid 20th century. Special attention is given to the emergence of "modernism" and the influence of science on such movements as Impressionism and Cubism.

ARTh 284. History of Photography. 3 Units.
A survey of the history of photography from its inception in 1839 to the present. Emphasis is on the complex relationship between technological innovations and picture-making; the artistic, documentary, and personal uses of photography; and the relationship of photography to other art forms.

ARTh 301. Museums and Globalization. 3 Units.
Museums are everywhere contested spaces today. Historically designed as symbols of power, centers for research, agents of public education and community formation in Western industrial societies, they have become sites of development and cultural controversy on a global scale. From Cleveland and Paris to Nairobi and Dubai museums figure in urban redevelopment, national identity formation, conflicts between religion and science, and global tourism. Questions we will consider in this course: what are the fundamental features of museums as institutions? what ties have linked them to wider national and international communities of academics, NGO's and business? to political, economic and social concerns? how do museums in Asia, Africa, the Middle East, and Latin America figure in the current international contention over heritage rights? This is an innovative course allowing students to collaborate on projects, engage with guest lecturers and access museums across the globe. The course is organized in three parts: Part I: National Identity Building and Museums; Part II: Museums and Identity Politics; Part III: Museums and Global Development. Offered as HSTY 329, ARTH 301, HSTY 429, and ARTH 401.

ARTh 302. Buddhist Art in Asia. 3 Units.
This course explores the visual and material culture of Buddhism in Asia from its origins in India to its transmission and transformation in China, Korea, Japan, Tibet, Thailand, Cambodia and Indonesia. Our historically and culturally structured examination traces major developments in Buddhist art and their relationships with belief, practice, and ritual. We consider the ways that artistic traditions have adapted and evolved both within individual cultures and cross-culturally. We primarily focus on studying the historical contexts for sculpture, architecture, and painting, but we also consider the movement of Buddhist works from temples to sites of secular display in museums around the world, and the religious, cultural, and ethical issues that arise from these moves. Topics include: representations of the life of the historical Buddha; visual programs of temples; artistic representations of paradises and hells; sacred sites and architecture; imperial patronage of Buddhist art; the role of art in pilgrimage and ritual; and visual imagery associated with Pure Land, Chan, Zen and esoteric traditions. Visits to and engagement with objects in the new Asian galleries at the Cleveland Museum of Art provide a rich environment for our class sessions and student projects. Counts for CAS Global & Cultural Diversity Requirement. Offered as ARTH 302 and ARTH 402.

ARTh 307. Arts of China. 3 Units.
This course explores a selection of major developments in Chinese visual and material culture from ancient times to the present day. We consider works in multiple media including bronzes, pottery, sculpture, calligraphy, paintings, ceramics and installations. We look into the roles of art in society, the relationship of art to political authority, the place of art in religious practice and experience, connections between art and literature, and how art relates to the expression of personal, social, political, and cultural identity. We pay particular attention to landscape painting; pictorial and sculptural programs of Buddhist grottoes; art commissioned and collected by the imperial court; objects associated with Daoist, Buddhist, and Confucian religious practices and sacred sites; art produced during periods of non-Chinese rule under the Mongols and Manchus; the affects of foreign styles and ideas on artists; and the role of Chinese artists in the contemporary global art world and market. We also examine the role of museums in selecting, preserving, and presenting Chinese art in the 20th and 21st century. Visits to the Cleveland Museum of Art form an integral part of the course. Offered as ARTH 307 and ARTH 407.

ARTh 308. Daoism: Visual Culture, History and Practice. 3 Units.
This course explores developments in the visual culture, history and practices of Daoist religious traditions in China from the third to twentieth centuries. Our historically and conceptually structured examination draws upon a balance of visual, textual, and material sources, while considering the various approaches scholars have employed to understand the history and development of Daoist traditions. Topics include: sacred scriptures and liturgies, biographies and visual narratives, iconography and functions of the pantheon of gods and immortals, views of the self and the body, practices of inner alchemy and self-cultivation, thunder deities and exorcism, dietetics and medicine and modes of meditation and ritual. Offered as ARTH 308, ARTH 408, and RLGN 308.
ARTH 311. Rome: City and Image. 3 Units.
This course studies the architectural and urban history of Rome from the republican era of the ancient city up to the eighteenth century using the city itself as the major "text." The emphasis will be placed on the extraordinary transformations wrought in the city, or at least in key districts, by powerful rulers and/or elites, especially in the ancient empire and in the Renaissance and baroque eras. In a larger perspective, the great construction projects exerted a far-reaching effect within and beyond Europe, but we will study them in relation to their topographical situation, their functions, and their place in a long history of variations on prestigious themes since many of the artworks and the urban settings featured in the course carry the mark of the Long history of the city itself. Recommended preparation: At least one 200-level course in ANTH, ARTH, CLSC, ENGL, HSTY, or RLGN. Offered as ARTH 311/411 and CLSC 311.

ARTH 325. Art at the Crossroads of Religion: Polytheistic, Christian, and Islamic Art in Antiquity. 3 Units.
People often single out the reign of Constantine (A.D. 306-337) as the point in history when Rome transformed from a polytheistic empire to a Christian empire. This course questions the strict divide between the categories of "pagan" and "Christian" in Rome in the imperial period and beyond. Through a close examination of the artistic and architectural record, students will come to understand that this dichotomy is a modern invention; for people living in the Roman Empire, religious identities were extraordinarily fluid. Indeed, traditional polytheistic religion and Christianity remained closely intertwined for centuries after Constantine "Christianized" the Empire. Moreover, religious pluralism had been a fundamental part of Roman culture since the founding of ancient Rome. We will survey a range of material culture, including public statuary, sarcophagi, silver hordes, and temples and churches. We will also examine sites such as the border city of Dura-Europos in Syria to explore how religious identities in the Roman Empire (including Judaism, early Christianity, and so-called mystery cults) intertwined even when Rome was still supposedly a "pagan" Empire. The course pays particular attention to the art and architecture produced under Constantine, whom people today often remember as Rome's first Christian emperor but who represents, in fact, a complex amalgam of polytheistic and monotheistic practices and identities. We will also explore how Christian art slowly but ultimately became the predominant visual culture in the Roman Empire. Finally, we will examine how Early Islamic art and architecture exploited the Greco-Roman visual tradition to the ends of this new religion. Offered as ARTH 325, ARTH 425 and CLSC 325.

ARTH 327. The Parthenon Then and Now: New Discoveries, Old Problems and Reception. 3 Units.
The Parthenon is an icon of western art and culture. Over 250 year of scholarship on this world-renowned building have revealed many of its secrets, but numerous questions still remain. New finds on the Acropolis itself and elsewhere in Greece have shed light on some of these issues, and as a result new theories abound. This seminar offers an overview of the temple, its architecture and sculpture, and will investigate its place in the civic and religious ideology of classical Athens. The course will also trace the Parthenon's many post-classical permutations, into a Christian Church and an Islamic mosque, and its impact on later western art and architecture. Finally the class will debate the moral and ethical issue of the Elgin Marbles - to repatriate them to Greece or to retain them in the British Museum in perpetuity. Offered as ARTH 327, ARTH 427, CLSC 327, CLSC 427.

ARTH 329. Marvels of Rome: Monuments and Their Decoration in the Roman Empire. 3 Units.
This course examines some of the most famous monuments of the Roman Empire, including Nero's Golden House, the Colosseum, the Pantheon, Hadrian's Villa at Tivoli, and the lavish villa of Piazza Armerina in Sicily. We will study each monument in depth, delving into the architecture, paintings, sculptures, mosaics, and social functions of each monument. Students will learn how to analyze artistic and archaeological evidence, ancient textual evidence (poems, prose, and inscriptions), and secondary scholarship to reconstruct the visual appearances and historical and cultural contexts of the monuments in questions. Throughout the course, students will gain a new appreciation and deeper understanding of some of the most iconic buildings of the classical tradition. Offered as ARTH 329, ARTH 429, and CLSC 329.

ARTH 332. Art and Archaeology of Ancient Italy. 3 Units.
The arts of the Italian peninsula from the 8th century B.C. to the 4th century A.D., with emphasis on recent archaeological discoveries. Lectures deal with architecture, sculpture, painting, and the decorative arts, supplemented by gallery tours at the Cleveland Museum of Art. Offered as ARTH 332, CLSC 332, and ARTH 432.

ARTH 333. Greek and Roman Painting. 3 Units.
Greek vase painting, Etruscan tomb painting and Roman wall painting. The development of monumental painting in antiquity. Offered as ARTH 333, CLSC 333, and ARTH 433.

ARTH 334. Art and Archaeology of Greece. 3 Units.
A survey of the art and architecture of Greece from the beginning of the Bronze Age (3000 B.C.) to the Roman conquest (100 B.C.) with emphasis on recent archaeological discoveries. Lectures deal with architecture, sculpture, painting, and the decorative arts, supplemented by gallery tours at the Cleveland Museum of Art. Offered as ARTH 334, CLSC 334, and ARTH 434.

ARTH 335. Issues in Ancient Art. 3 Units.
Various topics in Ancient art. Lectures, discussions and reports. Offered as ARTH 335 and ARTH 435.

ARTH 340. Issues in the Art of China. 3 Units.
This is a topics course. Each offering will focus on a specific topic within the area of Chinese art. Sample topics may include: Women painters in Beijing, Modern Artists in China-1980-Present, Shang Dynasty Tombs, Yuan Dynasty Buddhist Art. Lectures, discussions, and reports. Offered as ARTH 340 and ARTH 440.

ARTH 341. Issues in the Art of Japan. 3 Units.
This is a topics course. Each offering will focus on a specific topic within the area of Japanese art. Sample topics may include: Muromachi Hanging Scrolls, Ryoan-ji Temple Garden Architecture, Rimpa School Panel Screens, Buddhist Painting in the Edo Period. Lectures, discussions, and reports. Offered as ARTH 341 and ARTH 441.

ARTH 342. Issues in Indian and Southeast Asian Art. 3 Units.
This course covers topics in the history of India and neighboring regions with emphasis on connections with works in the Cleveland Museum of Art. Offerings include The Buddha Image, Murals and Manuscripts, The Hindu Temple, Krishna in Art and Literature, and the History of Mughal Painting. Lectures, discussions, and reports. Offered as ARTH 342, ARTH 442, and HSTY 324.
ARTH 344. Issues in the Art of Africa. 3 Units.
This is a topics course. Each offering will focus on a specific topic within the area of African art. Sample topics may include: Ritual Masks, Sub-Saharan Religious Architecture, Carvings of Twins in Fertility Rites, Benin Bronze Warrior Reliefs. Lectures, discussions, and reports. Offered as ARTH 344 and ARTH 444.

ARTH 349. Gothic Art: Vision and Matter. 3 Units.
This course will examine the development and dissemination of Gothic art in Western Europe in the High and Late Middle Ages. We will consider a variety of media, including architecture, metalwork, sculpture, manuscript illumination, panel paintings, fresco cycles, and small devotional objects. As we study medieval art in its socio-historical contexts--private and public, monastic and political, liturgical and lay--we will pay special attention to issues of patronage, relationships between texts and images, the introduction of visionary and mystical devotion, attitudes towards education and authority, differences between male and female piety, modes of medieval viewing, and reception and manipulation of art by medieval audiences. Visits to the CMA will form an integral part of the course. Offered as ARTH 349 and ARTH 449.

ARTH 350. Issues in Medieval Art. 3 Units.
Various topics in Medieval Art. Lectures, discussions, and reports. Offered as ARTH 350 and ARTH 450.

ARTH 351. Late Gothic Art in Italy. 3 Units.
Sculpture of the Pisani; early trends in Pisa, Siena, and Florence; Cimabue and Giotto; Duccio, Simone Martini, and the Lorenzetti; painting in Florence and Siena after the Black Death. Offered as ARTH 351 and ARTH 451.

ARTH 352. Italian Art of the 15th Century. 3 Units.
The early 15th century in Florence, civic humanism, the sculpture of Ghiberti and Donatello, the painting of Masaccio; the International Style in painting, the art of Uccello, Piero della Francesca, Mantegna, and Botticelli; Carpaccio and the Bellini in Venice. Offered as ARTH 352 and ARTH 452.

ARTH 353. Sixteenth Century Italian Art. 3 Units.
The development of the High Renaissance and Mannerist styles in Italy and late 16th century trends: painting and sculpture. Offered as ARTH 353 and ARTH 453.

ARTH 355. The Book in the Middle Ages: The Christian, Jewish, and Islamic Tradition. 3 Units.
This course will examine later medieval manuscript production, paying particular attention to the issues of patronage, gender, literacy, reception, and cultural biases. We will explore the imagery and texts of monastic and courtly manuscripts, travel books and devotional manuals, all within the framework of the tightly interwoven theological and social discourses of the institutions that commissioned them. As the title of the course indicates, we will study Christian, Jewish, and Islamic books and their interrelationships; for example, we will compare Islamic encyclopedias of the natural world, such as Zakariya ibn Muhammad al-Qazwini’s illustrated Wonders of Creation, with medieval bestiaries, herbals, and encyclopedias such as Hartman Schedel’s Liber Chronicarum and Les Merveilles du Monde. Each religious culture will receive a special close-study spotlight: Jewish Haggadot (books for the Passover Seder), Christian courtly romances, and Islamic manuscripts of the Shahnama epic. Offered as ARTH 355 and ARTH 455.

ARTH 358. Medieval Body. 3 Units.
This course will explore the meanings and representations of the body in western medieval culture. Topics will include bleeding bodies, fragmented bodies, lactating bodies, labile bodies, cosmic bodies, physiological bodies, mystical bodies, suffering bodies, edible bodies, enclosed bodies, gendered bodies, Christ’s bodies, Mary’s bodies, decomposing bodies, macabre bodies, resurrected bodies, dead bodies, intercessory bodies, unhinging bodies, translucent bodies, martyred bodies, desirable bodies, desirous bodies, abrupt bodies, mimetic bodies, nude bodies, marginalized bodies, defleshed bodies, social bodies, political bodies, monstrous bodies, mnemonic bodies, and deformed bodies. We will explore the complex rhetoric of embodiment as it manifests itself in the ambiguous discourse—both medieval and contemporary—on the relationships between the material and intangible, spiritual and physical, somatic and mental, corporeal and ethereal. Offered as ARTH 358 and ARTH 458.

ARTH 359. Visual Culture of Medieval Women. 3 Units.
This course will consider the roles of women as patrons, subjects, producers and consumers of visual culture, focusing particularly on the twelfth through fifteenth centuries. Throughout the course, we will study the different ways medieval men and women perceived, read, figured, and interacted with the female body, which was frequently seen as a fraught site of desire and repulsion, fear and fascination. Students will be asked to read primary sources as well as critical materials that address contradictory constructions of gender and sex in medieval images and texts. The course, therefore, will not simply focus on artistic production, but will include readings and discussions of social and political history, theology, and literature of the Middle Ages. Offered as ARTH 359 and ARTH 459; cross-listed as WGST 359 since it focuses on the role of women in visual culture and so can satisfy a requirement in the program for the course on women in the arts. Offered as ARTH 359, ARTH 459 and WGST 359.

ARTH 360. Renaissance Art in Northern Europe. 3 Units.
Painting, sculpture, and the graphic arts in Belgium, France, Germany, and The Netherlands, 1400-1580, highlighting the careers and contributions of specific artists such as Jan van Eyck, Albrecht Durer, and Pieter Bruegel. We will also analyze the changing social, cultural, religious, and political circumstances of the art made during this period, which saw the invention of printmaking, the Protestant Revolution, and increased strife between rulers and their subjects. The rise of new subjects such as landscape and scene of everyday life will be explored, and changes in patronage will be discussed, concentrating on the shift from church and noble patronage to increasingly middle-class patronage related to the beginnings of the open art market. Offered as ARTH 360 and ARTH 460.

ARTH 361. 17th-Century Art in Belgium and The Netherlands. 3 Units.
The arts of painting, drawing, and printmaking in Belgium and The Netherlands are discussed in relationship to political, social, cultural, and religious contexts. We will explore the careers and production of individual artists such as Rubens, Van Dyck, Hals, Rembrandt, and Vermeer. Developments in new subjects, artistic specialization, and the expansion of the open market are seen as important factors in shaping Belgian and Dutch art. Offered as ARTH 361 and ARTH 461.

ARTH 362. Issues in Early Modern Southern European Art. 3 Units.
Various topics in the art of southern Europe, 1400-1800. Lectures, discussions, reports, and gallery visits in the CMA. Offered as ARTH 362 and 462.
ARTH 385. American Avant-Garde: 1900 - 1925. 3 Units.
An examination of the development of avant-garde styles in New York during the early twentieth century. In-depth discussion of the Photo-scession, Stieglitz’s “291” gallery, the Armory Show, Marcel Duchamp's move to America, and the formation and demise of the New York Dada movement. Offered as ARTH 385 and ARTH 485.

ARTH 386. Issues in American Art. 3 Units.
Various topics in American art. Each offering will focus on a specific topic within American art. Lectures, discussions, and report. The course will entail regular oral classroom reports and short writing assignments as well as a final paper. Producing an intellectually significant final paper is the major goal of the class. Graduate students are expected to produce a final paper of greater length than Undergraduates and that shows evidence of original scholarship. Offered as ARTH 386 and ARTH 486.

ARTH 390. The Work of Art and the Museum. 3 Units.
This writing-intensive class will explore essential questions about the art museum, art collecting, authenticity, and quality through analysis of the collections of the Cleveland Museum of Art. The CMA is generally regarded as one of the top ten American art museums, and one of the few that provides a near-comprehensive survey of art from all regions of the world from ancient times to the present. In order to exist, any art museum must provide practical answers to large questions. What is a work of art? What is a masterpiece? What sorts of meanings do works of art communicate? What sort of history do works of art provide? How does the context in which an artwork is placed affect its meaning? What should an art museum collect and what should it exclude? We will explore these issues through close readings of texts, discussions, and meetings with art historians and curators, and above all through first-hand study and contact with original works of art. Counts as SAGES Departmental Seminar.

ARTH 392. Issues in 20th/21st Century Art. 3 Units.
Various topics in 20th/21st century art, with class lectures, discussions and reports. Offered as ARTH 392 and ARTH 492.

ARTH 393. Contemporary Art: Critical Directions. 3 Units.
An examination of the directions taken by avant-garde American art and criticism in the aftermath of Abstract Expressionism. Includes the rise and fall of modernism in the 1960s and 70s, as well as an investigation of Post-modern trends and theories. Offered as ARTH 393 and ARTH 493.

ARTH 394. Departmental Seminar. 3 Units.
The Department of History of Art and Art departmental seminar. A topical course, emphasizing disciplinary writing and modes of investigation and analysis. It is recommended for Art History majors before the majors seminar/capstone course, typically taken in the junior or senior years. The course advances the goals of SAGES within the disciplinary context of art history by focusing on close readings of art history texts (with an emphasis upon methodological approaches), examination of original works of art when possible, analytical writing, and intensive seminar-style discussion. Counts as SAGES Departmental Seminar. Prereq: ARTH 101 or ARTH 102 and at least one 200-level ARTH course.

ARTH 385. Issues in Early Modern Northern European Art. 3 Units.
Various topics in the art of northern Europe, 1400-1800. Lectures, discussions, reports, and gallery visits in the CMA. Offered as ARTH 385 and ARTH 465.

ARTH 374. Impressionism to Symbolism. 3 Units.
Major developments in European painting and sculpture during the latter half of the nineteenth century. Post-impressionism synthethism, symbolism, and the arts and crafts movement considered in their socio-cultural contexts. Works of Degas, Manet, Monet, Klimt, Bocklin, Gauguin, etc. Offered as ARTH 374 and ARTH 474.

ARTH 379. Issues in 19th Century Art. 3 Units.
Various topics in 19th century art, with class lectures, discussions and reports. Consult department for current topic. Offered as ARTH 379 and ARTH 479.

ARTH 380. Abstract Expressionism and Its Aftermath. 3 Units.
An examination of the development and influences of Abstract Expressionism, including the impact on the Beat Generation and Pop Art. Offered as ARTH 380 and ARTH 480.

ARTH 382. Art, Eco-criticism, and the Environment. 3 Units.
As issues of sustainability and environmental impact have become increasingly dominant concerns in contemporary society, eco-criticism has emerged as a vital methodological thread across the humanities. Motivated by ethical as well as scholarly concerns, eco-criticism not only enacts a fundamental examination of nature as an ideological construct, but also seeks to investigate the complex interrelationship between humanity and the environment. Concurrently, there has been a marked interest in studying the role of “green issues” in contemporary art, particularly in tracing the development of earth art or eco-art from the early 1970s to the present. The goal of this seminar is to forge a link between these two emergent strands by tracing the complex relationship between art and the environment from the nineteenth-century to the present, seeking to thereby assess the capaciousness of eco-criticism as a methodological approach to art history. Offered as ARTH 382 and ARTH 482.

ARTH 383. Gender Issues in Feminist Art: The 20th/21st Century. 3 Units.
This course aims at understanding the myriad ways issues of gender have been encoded and/or played out in 20th and early 21st century art. A variety of paintings, sculpture, photographs and performances by women, gays and other marginalized groups, especially those that engage in “the discourse of the body,” will be examined through a gender-oriented focus. Analysis of a variety of provocative readings will provide methodologies useful for assessing aesthetic and political meanings in modern and contemporary art across national boundaries. Special emphasis will be placed on women artists who have recently begun to integrate gender and ethnicity. Offered as ARTH 383, WGST 383 and ARTH 483.

ARTH 384. American Art and Architecture in the Age of Washington and Jefferson. 3 Units.
In the 18th century, Americans created not only a political revolution but an artistic and creative one as well. In the 17th century, most Americans were subsistence farmers and most of their products, manufactures, and buildings were relatively crude. In the 18th century, Americans not only established a new and lasting form of government, but for the first time produced paintings, buildings, furniture and silver that rivaled the finest productions of Europe. Notably, many of the leaders of the American Revolution, such as Paul Revere, George Washington, and Thomas Jefferson, also made significant contributions to the arts. Offered as ARTH 384 and ARTH 484.
ARTH 401. Museums and Globalization. 3 Units.
This course is designated for students seeking professional experience in art history. It focuses on the museum experience (registration, exhibition, interpretation, and administration) although students may also elect to conduct internships in museum-related environments such as art conservation. Students are encouraged to have gained significant experience in art history coursework before embarking on an internship. Students must identify an internship and supervisor as well as a campus internship supervisor the semester before enrolling in the internship. Recommended preparation: ARTH 101, ARTH 102, or ARTH 104, and consent.

ARTH 395. Internship. 3 Units.
This course is designated for students seeking professional experience in art history. It focuses on the museum experience (registration, exhibition, interpretation, and administration) although students may also elect to conduct internships in museum-related environments such as art conservation. Students are encouraged to have gained significant experience in art history coursework before embarking on an internship. Students must identify an internship and supervisor as well as a campus internship supervisor the semester before enrolling in the internship. Recommended preparation: ARTH 101, ARTH 102, or ARTH 104, and consent.

ARTH 396. Majors Seminar. 3 Units.
Capstone course required of all undergraduate Art History majors, typically taken in senior year. Requires professional-level research with peer and faculty oversight culminating in formal written and oral presentations. Limited to Art History majors. Counts as SAGES Senior Capstone.

ARTH 398. Independent Study in Art History. 1 - 3 Units.
Individual research and reports on special topics.

ARTH 399. Honors Thesis. 3 Units.
Intensive study of a topic or problem leading to the preparation of an honors thesis.

ARTH 401. Museums and Globalization. 3 Units.
Museums are everywhere contested spaces today. Historically designed as symbols of power, centers for research, agents of public education and community formation in Western industrial societies, they have become sites of development and cultural controversy on a global scale. From Cleveland and Paris to Nairobi and Dubai museums figure in urban redevelopment, national identity formation, conflicts between religion and science, and global tourism. Questions we will consider in this course: what are the fundamental features of museums as institutions? what ties have linked them to wider national and international communities of academics, NGO’s and business? to political, economic and social concerns? how do museums in Asia, Africa, the Middle East, and Latin America figure in the current international contention over heritage rights? This is an innovative course allowing students to collaborate on projects, engage with guest lecturers and access museums across the globe. The course is organized in three parts: Part I: National Identity Building and Museums; Part II: Museums and Identity Politics; Part III: Museums and Global Development. Offered as HSTY 329, ARTH 301, HSTY 429, and ARTH 401.

ARTH 402. Buddhist Art in Asia. 3 Units.
This course explores the visual and material culture of Buddhism in Asia from its origins in India to its transmission and transformation in China, Korea, Japan, Tibet, Thailand, Cambodia and Indonesia. Our historically and culturally structured examination traces major developments in Buddhist art and their relationships with belief, practice, and ritual. We consider the ways that artistic traditions have adapted and evolved both within individual cultures and cross-culturally. We primarily focus on studying the historical contexts for sculpture, architecture, and painting, but we also consider the movement of Buddhist works from sites of secular display in museums around the world, and the religious, cultural, and ethical issues that arise from these moves. Topics include: representations of the life of the historical Buddha; visual programs of temples; artistic representations of paradises and hells; sacred sites and architecture; imperial patronage of Buddhist art; the role of art in pilgrimage and ritual; and visual imagery associated with Pure Land, Chan, Zen and esoteric traditions. Visits to and engagement with objects in the new Asian galleries at the Cleveland Museum of Art provide a rich environment for our class sessions and student projects. Counts for CAS Global & Cultural Diversity Requirement. Offered as ARTH 302 and ARTH 402.

ARTH 407. Arts of China. 3 Units.
This course explores a selection of major developments in Chinese visual and material culture from ancient times to the present day. We consider works in multiple media including bronzes, pottery, sculpture, calligraphy, paintings, ceramics and installations. We look into the roles of art in society, the relationship of art to political authority, the place of art in religious practice and experience, connections between art and literature, and how art relates to the expression of personal, social, political, and cultural identity. We pay particular attention to landscape painting; pictorial and sculptural programs of Buddhist grottoes; art commissioned and collected by the imperial court; objects associated with Daoist, Buddhist, and Confucian religious practices and sacred sites; art produced during periods of non-Chinese rule under the Mongols and Manchus; the affects of foreign styles and ideas on artists; and the role of Chinese artists in the contemporary global art world and market. We also examine the role of museums in selecting, preserving, and presenting Chinese art in the 20th and 21st century. Visits to the Cleveland Museum of Art form an integral part of the course. Offered as ARTH 307 and ARTH 407.

ARTH 408. Daoism: Visual Culture, History and Practice. 3 Units.
This course explores developments in the visual culture, history and practices of Daoist religious traditions in China from the third to twentieth centuries. Our historically and conceptually structured examination draws upon a balance of visual, textual, and material sources, while considering the various approaches scholars have employed to understand the history and development of Daoist traditions. Topics include: sacred scriptures and liturgies, biographies and visual narratives, iconography and functions of the pantheon of gods and immortals, views of the self and the body, practices of inner alchemy and self-cultivation, thunder deities and exorcism, dietetics and medicine and modes of meditation and ritual. Offered as ARTH 308, ARTH 408, and RLGN 308.
ARTH 411. Rome: City and Image. 3 Units.
This course studies the architectural and urban history of Rome from the republican era of the ancient city up to the eighteenth century using the city itself as the major "text." The emphasis will be placed on the extraordinary transformations wrought in the city, or at least in key districts, by powerful rulers and/or elites, especially in the ancient empire and in the Renaissance and baroque eras. In a larger perspective, the great construction projects exerted a far-reaching effect within and beyond Europe, but we will study them in relation to their topographical situation, their functions, and their place in a long history of variations on prestigious themes since many of the artworks and the urban settings featured in the course carry the mark of the Long history of the city itself. Recommended preparation: At least one 200-level course in ANTH, ARTH, CLSC, ENGL, HSTY, or RLGN. Offered as ARTH311/411 and CLSC 311.

ARTH 425. Art at the Crossroads of Religion: Polytheistic, Christian, and Islamic Art in Antiquity. 3 Units.
People often single out the reign of Constantine (A.D. 306-337) as the point in history when Rome transformed from a polytheistic empire to a Christian empire. This course questions the strict divide between the categories of "pagan" and "Christian" in Rome in the imperial period and beyond. Through a close examination of the artistic and architectural record, students will come to understand that this dichotomy is a modern invention; for people living in the Roman Empire, religious identities were extraordinarily fluid. Indeed, traditional polytheistic religion and Christianity remained closely intertwined for centuries after Constantine "Christianized" the Empire. Moreover, religious pluralism had been a fundamental part of Roman culture since the founding of ancient Rome. We will survey a range of material culture, including public statuary, sarcophagi, silver hordes, and temples and churches. We will also examine sites such as the border city of Dura-Europos in Syria to explore how religious identities in the Roman Empire (including Judaism, early Christianity, and so-called mystery cults) intertwined even when Rome was still supposedly a "pagan" Empire. The course pays particular attention to the art and architecture produced under Constantine, whom people today often remember as Rome's first Christian emperor but who represents, in fact, a complex amalgam of polytheistic and monotheistic practices and identities. We will also explore how Christian art slowly but ultimately became the predominant visual culture in the Roman Empire. Finally, we will examine how Early Islamic art and architecture exploited the Greco-Roman visual tradition to the ends of this new religion. Offered as ARTH 325, ARTH 425 and CLSC 325.

ARTH 427. The Parthenon Then and Now: New Discoveries, Old Problems and Reception. 3 Units.
The Parthenon is an icon of western art and culture. Over 250 year of scholarship on this world-renowned building have revealed many of its secrets, but numerous questions still remain. New finds on the Acropolis itself and elsewhere in Greece have shed light on some of these issues, and as a result new theories abound. This seminar offers an overview of the temple, its architecture and sculpture, and will investigate its place in the civic and religious ideology of classical Athens. The course will also trace the Parthenon's many post-classical permutations, into a Christian Church and an Islamic mosque, and its impact on later western art and architecture. Finally the class will debate the moral and ethical issue of the Elgin Marbles - to repatriate them to Greece or to retain them in the British Museum in perpetuity. Offered as ARTH 327, ARTH 427, CLSC 327, CLSC 427.

ARTH 429. Marvels of Rome: Monuments and Their Decoration in the Roman Empire. 3 Units.
This course examines some of the most famous monuments of the Roman Empire, including Nero's Golden House, the Colosseum, the Pantheon, Hadrian's Villa at Tivoli, and the lavish villa of Piazza Armerina in Sicily. We will study each monument in depth, delving into the architecture, paintings, sculptures, mosaics, and social functions of each monument. Students will learn how to analyze artistic and archaeological evidence, ancient textual evidence (poems, prose, and inscriptions), and secondary scholarship to reconstruct the visual appearances and historical and cultural contexts of the monuments in questions. Throughout the course, students will gain a new appreciation and deeper understanding of some of the most iconic buildings of the classical tradition. Offered as ARTH 329, ARTH 429, and CLSC 329.

ARTH 432. Art and Archaeology of Ancient Italy. 3 Units.
The arts of the Italian peninsula from the 8th century B.C. to the 4th century A.D., with emphasis on recent archaeological discoveries. Lectures deal with architecture, sculpture, painting, and the decorative arts, supplemented by gallery tours at the Cleveland Museum of Art. Offered as ARTH 332, CLSC 332, and ARTH 432.

ARTH 433. Greek and Roman Painting. 3 Units.
Greek vase painting, Etruscan tomb painting and Roman wall painting. The development of monumental painting in antiquity. Offered as ARTH 333, CLSC 333, and ARTH 433.

ARTH 434. Art and Archaeology of Greece. 3 Units.
A survey of the art and architecture of Greece from the beginning of the Bronze Age (3000 B.C.) to the Roman conquest (100 B.C.) with emphasis on recent archaeological discoveries. Lectures deal with architecture, sculpture, painting, and the decorative arts, supplemented by gallery tours at the Cleveland Museum of Art. Offered as ARTH 334, CLSC 334, and ARTH 434.

ARTH 435. Issues in Ancient Art. 3 Units.
Various topics in Ancient Art. Lectures, discussions and reports. Offered as ARTH 335 and ARTH 435.

ARTH 440. Issues in the Art of China. 3 Units.
This is a topics course. Each offering will focus on a specific topic within the area of Chinese art. Sample topics may include: Women painters in Beijing, Modern Artists in China-1980-Present, Shang Dynasty Tombs, Yuan Dynasty Buddhist Art. Lectures, discussions, and reports. Offered as ARTH 340 and ARTH 440.

ARTH 441. Issues in the Art of Japan. 3 Units.
This is a topics course. Each offering will focus on a specific topic within the area of Japanese art. Sample topics may include: Muromachi Hanging Scrolls, Ryoan-ji Temple Garden Architecture, Rimp School Panel Screens, Buddhist Painting in the Edo Period. Lectures, discussions, and reports. Offered as ARTH 341 and ARTH 441.

ARTH 442. Issues in Indian and Southeast Asian Art. 3 Units.
This course covers topics in the history of India and neighboring regions with emphasis on connections with works in the Cleveland Museum of Art. Offerings include The Buddha Image, Murals and Manuscripts, The Hindu Temple, Krishna in Art and Literature, and the History of Mughal Painting. Lectures, discussions, and reports. Offered as ARTH 342, ARTH 442, and HSTY 324.
ARTH 444. Issues in the Art of Africa. 3 Units.
This is a topics course. Each offering will focus on a specific topic within the area of African art. Sample topics may include: Ritual Masks, Sub-Saharan Religious Architecture, Carvings of Twins in Fertility Rites, Benin Bronze Warrior Reliefs. Lectures, discussions, and reports. Offered as ARTH 344 and ARTH 444.

ARTH 449. Gothic Art: Vision and Matter. 3 Units.
This course will examine the development and dissemination of Gothic art in Western Europe in the High and Late Middle Ages. We will consider a variety of media, including architecture, metalwork, sculpture, manuscript illumination, panel paintings, fresco cycles, and small devotional objects. As we study medieval art in its socio-historical contexts--private and public, monastic and political, liturgical and lay--we will pay special attention to issues of patronage, relationships between texts and images, the introduction of visionary and mystical devotion, attitudes towards education and authority, differences between male and female piety, modes of medieval viewing, and reception and manipulation of art by medieval audiences. Visits to the CMA will form an integral part of the course. Offered as ARTH 349 and ARTH 449.

ARTH 450. Issues in Medieval Art. 3 Units.
Various topics in Medieval Art. Lectures, discussions, and reports. Offered as ARTH 350 and ARTH 450.

ARTH 451. Late Gothic Art in Italy. 3 Units.
Sculpture of the Pisani; early trends in Pisa, Siena, and Florence; Cimabue and Giotto; Duccio, Simone Martini, and the Lorenzetti; painting in Florence and Siena after the Black Death. Offered as ARTH 351 and ARTH 451.

ARTH 452. Italian Art of the 15th Century. 3 Units.
The early 15th century in Florence, civic humanism, the sculpture of Ghiberti and Donatello, the painting of Masaccio; the International Style in painting, the art of Uccello, Piero della Francesca, Mantegna, and Botticelli; Carpaccio and the Bellini in Venice. Offered as ARTH 352 and ARTH 452.

ARTH 453. Sixteenth Century Italian Art. 3 Units.
The development of the High Renaissance and Mannerist styles in Italy and late 16th century trends: painting and sculpture. Offered as ARTH 353 and ARTH 453.

ARTH 455. The Book in the Middle Ages: The Christian, Jewish, and Islamic Tradition. 3 Units.
This course will examine later medieval manuscript production, paying particular attention to the issues of patronage, gender, literacy, reception, and cultural biases. We will explore the imagery and texts of monastic and courtly manuscripts, travel books and devotional manuals, all within the framework of the tightly interwoven theological and social discourses of the institutions that commissioned them. As the title of the course indicates, we will study Christian, Jewish, and Islamic books and their interrelations; for example, we will compare Islamic encyclopedias of the natural world, such as Zakariya ibn Muhammad al-Gazwini's illustrated Wonders of Creation, with medieval bestiaries, herbs, and encyclopedias such as Hartman Schedel's Liber Chronicarum and Les Merveilles du Monde. Each religious culture will receive a special close-study spotlight: Jewish Haggadot (books for the Passover Seder), Christian courtly romances, and Islamic manuscripts of the Shahnama epic. Offered as ARTH 355 and ARTH 455.

ARTH 458. Medieval Body. 3 Units.
This course will explore the meanings and representations of the body in western medieval culture. Topics will include bleeding bodies, fragmented bodies, lactating bodies, labile bodies, cosmic bodies, physiological bodies, mystical bodies, suffering bodies, edible bodies, enclosed bodies, gendered bodies, Christ's bodies, Mary's bodies, decomposing bodies, macabre bodies, resurrected bodies, dead bodies, intercessory bodies, unhinging bodies, translucent bodies, martyred bodies, desirable bodies, desirous bodies, abhorrent bodies, mimetic bodies, nude bodies, marginalized bodies, defleshed bodies, social bodies, political bodies, monstrous bodies, mnemonic bodies, and deformed bodies. We will explore the complex rhetoric of embodiment as it manifests itself in the ambiguous discourse--both medieval and contemporary--on the relationships between the material and intangible, spiritual and physical, somatic and mental, corporeal and ethereal. Offered as ARTH 358 and ARTH 458.

ARTH 459. Visual Culture of Medieval Women. 3 Units.
This course will consider the roles of women as patrons, subjects, producers and consumers of visual culture, focusing particularly on the twelfth through fifteenth centuries. Throughout the course, we will study the different ways medieval men and women perceived, read, figured, and interacted with the female body, which was frequently seen as a fraught site of desire and repulsion, fear and fascination. Students will be asked to read primary sources as well as critical materials that address contradictory constructions of gender and sex in medieval images and texts. The course, therefore, will not simply focus on artistic production, but will include readings and discussions of social and political history, theology, and literature of the Middle Ages. Offered as ARTH 359 and ARTH 459; cross-listed as WGST 359 since it focuses on the role of women in visual culture and so can satisfy a requirement in the program for the course on women in the arts. Offered as ARTH 359, ARTH 459 and WGST 359.

ARTH 460. Renaissance Art in Northern Europe. 3 Units.
Painting, sculpture, and the graphic arts in Belgium, France, Germany, and The Netherlands, 1400-1580, highlighting the careers and contributions of specific artists such as Jan van Eyck, Albrecht Durer, and Pieter Bruegel. We will also analyze the changing social, cultural, religious, and political circumstances of the art made during this period, which saw the invention of printmaking, the Protestant Revolution, and increased strife between rulers and their subjects. The rise of new subjects such as landscape and scene of everyday life will be explored, and changes in patronage will be discussed, concentrating on the shift from church and noble patronage to increasingly middle-class patronage related to the beginnings of the open art market. Offered as ARTH 360 and ARTH 460.

ARTH 461. 17th-Century Art in Belgium and The Netherlands. 3 Units.
The arts of painting, drawing, and printmaking in Belgium and The Netherlands are discussed in relationship to political, social, cultural, and religious contexts. We will explore the careers and production of individual artists such as Rubens, Van Dyck, Hals, Rembrandt, and Vermeer. Developments in new subjects, artistic specialization, and the expansion of the open market are seen as important factors in shaping Belgian and Dutch art. Offered as ARTH 361 and ARTH 461.

ARTH 462. Issues in Early Modern Southern European Art. 3 Units.
Various topics in the art of southern Europe, 1400-1800. Lectures, discussions, reports, and gallery visits in the CMA. Offered as ARTH 362 and 462.
ARTH 465. Issues in Early Modern Northern European Art. 3 Units.
Various topics in the art of northern Europe, 1400-1800. Lectures, discussions, reports, and gallery visits in the CMA. Offered as ARTH 365 and ARTH 465.

ARTH 474. Impressionism to Symbolism. 3 Units.
Major developments in European painting and sculpture during the latter half of the nineteenth century. Post-impressionism synthetism, symbolism, and the arts and crafts movement considered in their socio-cultural contexts. Works of Degas, Manet, Monet, Klimt, Bocklin, Gauguin, etc. Offered as ARTH 374 and ARTH 474.

ARTH 479. Issues in 19th Century Art. 3 Units.
Various topics in 19th century art, with class lectures, discussions and reports. Consult department for current topic. Offered as ARTH 379 and ARTH 479.

ARTH 480. Abstract Expressionism and Its Aftermath. 3 Units.
An examination of the development and influences of Abstract Expressionism, including the impact on the Beat Generation and Pop Art. Offered as ARTH 380 and ARTH 480.

ARTH 482. Art, Eco-criticism, and the Environment. 3 Units.
As issues of sustainability and environmental impact have become increasingly dominant concerns in contemporary society, eco-criticism has emerged as a vital methodological thread across the humanities. Motivated by ethical as well as scholarly concerns, eco-criticism not only enacts a fundamental examination of nature as an ideological construct, but also seeks to investigate the complex interrelationship between humanity and the environment. Concurrently, there has been a marked interest in studying the role of “green issues” in contemporary art, particularly in tracing the development of earth art or eco-art from the early 1970s to the present. The goal of this seminar is to forge a link between these two emergent strands by tracing the complex relationship between art and the environment from the nineteenth-century to the present, seeking to thereby assess the capaciousness of eco-criticism as a methodological approach to art history. Offered as ARTH 382 and ARTH 482.

ARTH 483. Gender Issues in Feminist Art: The 20th/21st Century. 3 Units.
This course aims at understanding the myriad ways issues of gender have been encoded and/or played out in 20th and early 21st century art. A variety of paintings, sculpture, photographs and performances by women, gays and other marginalized groups, especially those that engage in “the discourse of the body,” will be examined through a gender-oriented focus. Analysis of a variety of provocative readings will provide methodologies useful for assessing aesthetic and political meanings in modern and contemporary art across national boundaries. Special emphasis will be placed on women artists who have recently begun to integrate gender and ethnicity. Offered as ARTH 383, WGST 383 and ARTH 483.

ARTH 484. American Art and Architecture in the Age of Washington and Jefferson. 3 Units.
In the 18th century, Americans created not only a political revolution but an artistic and creative one as well. In the 17th century, most Americans were subsistence farmers and most of their products, manufactures, and buildings were relatively crude. In the 18th century, Americans not only established a new and lasting form of government, but for the first time produced paintings, buildings, furniture and silver that rivaled the finest productions of Europe. Notably, many of the leaders of the American Revolution, such as Paul Revere, George Washington, and Thomas Jefferson, also made significant contributions to the arts. Offered as ARTH 384 and ARTH 484.

ARTH 485. American Avant-Garde: 1900 - 1925. 3 Units.
An examination of the development of avant-garde styles in New York during the early twentieth century. In-depth discussion of the Photo-secession, Stieglitz’s “291” gallery, the Armory Show, Marcel Duchamp’s move to America, and the formation and demise of the New York Dada movement. Offered as ARTH 385 and ARTH 485.

ARTH 486. Issues in American Art. 3 Units.
Various topics in American art. Each offering will focus on a specific topic within American art. Lectures, discussions, and report. The course will entail regular oral classroom reports and short writing assignments as well as a final paper. Producing an intellectually significant final paper is the major goal of the class. Graduate students are expected to produce a final paper of greater length than Undergraduates and that shows evidence of original scholarship. Offered as ARTH 386 and ARTH 486.

ARTH 489. M.A. Qualifying Paper. 3 Units.
Individual research and intensive study of a specific topic in art history that culminates in a written M.A. Qualifying Paper. Prereq: To be taken only after completion of 18 credit hours of graduate Art History coursework.

ARTH 490A. Visual Arts and Museums I. 3 Units.
This course examines the idea of the art museum in both its historical and contemporary manifestations, focusing on the context of Western Europe and the United States. As a result of this course, students should be familiar with the following topics: the historic development of the museum, from its origins in collecting practices to its modern incarnation as an institution; the development and care of a collection, including acquisition, cataloguing, and conservation; the display and housing of a collection, including internal and external museum architecture; the study and interpretation of the collection/exhibition, considering diverse publics; the governance of the institution, including project management, finance, and administration. Through the study of these topics, the student should be familiar with the following concepts: the museum as a place for learning, research and scholarship and the museum as steward of cultural property and the attendant issues of ethics and the law. ARTH 490A concentrates on museum collections and related aspects of care, research, interpretation and scholarship. Students who successfully complete ARTH 490A and ARTH 490B may be considered for admission into ARTH 491A, a supervised internship in an art museum or gallery situation.
ARTH 490B. Visual Arts and Museums: II. 3 Units.
This course examines the idea of the art museum in both its historical and contemporary manifestations, focusing on the context of Western Europe and the United States. As a result of this course, students should be familiar with the following topics: the historic development of the museum, from its origins in collecting practices to its modern incarnation as an institution; the development and care of a collection, including acquisition, cataloguing, and conservation; the display and housing of a collection, including internal and external museum architecture; the study and interpretation of the collection/exhibition, considering diverse publics; the governance of the institution, including project management, finance, and administration. Through the study of these topics, the student should be familiar with the following concepts: the museum as a place for learning, research and scholarship and the museum as steward of cultural property and the attendant issues of ethics and the law. ARTH 490B concentrates on the museum as an institution, including physical aspects, management and governance, and as a site of learning. The inter-connections between these broad fields and individual departments will be demonstrated and reinforced throughout the semester. Students who successfully complete ARTH 490A and ARTH 490B may be considered for admission into ARTH 491A, a supervised internship in an art museum or gallery situation.

ARTH 491A. Visual Arts and Museums: Internship. 1 Unit.
Recommended preparation: ARTH 490.

ARTH 491B. Visual Arts and Museums: Internship. 3 Units.
Second semester of Internship sequence. This internship focuses on the implementation of a comprehensive project that would serve a function similar to the requirement of a qualifying paper for the completion of a master's degree in art history. It is recommended that students undertake this internship in the same division in which their first internship was situated although students may find opportunities to parlay the skills acquired in the first internship to successful advanced work in another division. The key distinction here is that the work in ARTH 491B should build upon the expertise developed in ARTH 491 and represent a significant advance in responsibilities and skills. By week 10 of ARTH 491, students should begin to identify a potential project for ARTH 491B. By the first week of the semester in which ARTH 491B is to be completed, the student must file an internship agreement form with the department that includes a brief description of the project to be completed, including a summary of the project and major milestones/time line. In addition to working under the direct supervision of a museum mentor, the student must obtain a faculty mentor for the project and this information should be included in the internship agreement form. Students must file a mid-term and final report describing their duties and responsibilities and a self-assessment of their performance and a final portfolio with a final version of their project as well as examples of drafts and feedback received in the course of completing the project. Students must also keep a journal that tracks their milestones in completing their projects. The faculty supervisor will solicit a letter of assessment from the internship supervisor immediately upon the close of the internship and in sufficient time for final grades. Recommended preparation: ARTH 490, ARTH 491A.

ARTH 492. Issues in 20th/21st Century Art. 3 Units.
Various topics in 20th/21st century art, with class lectures, discussions, and reports. Offered as ARTH 392 and ARTH 492.

ARTH 493. Contemporary Art: Critical Directions. 3 Units.
An examination of the directions taken by avant-garde American art and criticism in the aftermath of Abstract Expressionism. Includes the rise and fall of modernism in the 1960s and '70s, as well as an investigation of Post-modern trends and theories. Offered as ARTH 393 and ARTH 493.

ARTH 494A. Directed Readings in Asian Art. 1 - 3 Unit.
Directed reading.

ARTH 494B. Ancient Art. 1 - 3 Unit.

ARTH 494C. Medieval Art. 1 - 3 Unit.

ARTH 494D. Renaissance and Baroque Art. 1 - 3 Unit.

ARTH 494E. American Art. 1 - 3 Unit.

ARTH 494F. Modern Art. 1 - 3 Unit.

ARTH 495. Methodologies of Art History. 3 Units.
The study of art history as a discipline in its practical and theoretical aspects. Consideration given to research methods, style and historical context, and a critical examination of selected major art historical texts with a view to understanding traditional as well as recent approaches. Special attention is given to art historical writing, employing selected original works in the Cleveland Museum of Art. Required of first-year graduate students in the Ph.D. and Master's programs.

ARTH 496. Materials, Methods, and Physical Examination of Works of Art. 3 Units.
This foundational course will introduce students to the examination methods, terminology and goals of art conservation as it supports art historical research and practice. Students will learn about the various materials that make up different kinds of works of art, how these materials have been used, and what can be learned by the physical examination of works of art. Emphasis will be placed on understanding the uses of and results obtained with imaging techniques (such as X-radiography, infrared reflectography) and on what can be learned through the trained use of the human eye alone. While art from the western tradition, particularly from the 14th through the 21st centuries will be emphasized in class examples, comparisons will be made to objects from other global cultures. The growing field of technical art history, where the results of physical examination are used to illuminate art historical issues such as how workshops functioned, will be considered as well. Each student will research one work of art in the Cleveland Museum of Art or other local collections to understand the physical history and current condition of that object. The goal will be for students to gain an informed understanding of how to evaluate the condition of a work of art, of what options are available for conservation treatment, and of what art-historical information can be obtained through physical examination.

ARTH 512. Seminar in Ancient Art. 3 Units.

ARTH 517. The History of Collecting and Exhibiting Asian Art. 3 Units.
This graduate seminar explores major themes, individuals, institutions, types of objects, and eras in the history of collecting and exhibiting Asian art. Adopting a cross-cultural and comparative approach, we investigate practices of collecting and display within Asia, and in Britain, Europe, and the United States. We examine personal, institutional, cultural, and national aims for collecting as well as processes involved in collection formation. We also consider how exhibitions have served as social agents of discourse, acts of cultural diplomacy, and their impact on the evolution of artistic canons. Topics include cross-cultural transfer and re-framing of objects; divergent connoisseurship practices and aesthetic tastes; overlapping roles of private collectors, dealers, curators, and scholars; political, economic, and social factors that affected collecting and display; exhibitions and collections as expressions of cultural and national identity; the roles of imperialism and colonialism; and the circulation of objects in global art markets. Areas and topics rotate.

ARTH 518. Seminar in Asian Art. 3 Units.

ARTH 545. Seminar in Medieval Art. 3 Units.
ARTH 551. Seminar in Early Modern Southern European Art. 3 Units.
ARTH 552. Seminar in Baroque Art. 3 Units.
ARTH 565. Seminar in American Art. 3 Units.
ARTH 570. Seminar: 19th Century Art. 3 Units.
ARTH 576. Seminar in Modern Art. 3 Units.
ARTH 590. History and Practice of Connoisseurship. 3 Units.
In this seminar we will consider the history, historiography, and practice of connoisseurship. In western cultures connoisseurship, the practice of attributing works of art to specific artists, regions, and time periods and assessing their quality, can be traced back to classical antiquity. It was practiced with renewed vigor in Europe from the sixteenth century onward and in the nineteenth century was a foundational methodology for the academic discipline of art history. While it came under criticism in the twentieth century as a method too closely aligned with the art market, connoisseurship continues to be practiced today, especially in museums and auction houses, as a vital and necessary methodological approach. In recent decades art historians have also begun to reevaluate the history, practices and historiographic importance of this methodology. Class discussions of the scholarly literature of connoisseurship and case studies of its practice will alternate with sessions held in the Cleveland Museum of Art to examine objects from the permanent collections. The museum sessions, led by curators and conservators, will also emphasize the role that physical condition plays in making connoisseurship assessments. Specific topics will be designated each time the course is offered. Prereq: ARTH 495.

ARTH 601. Research in Art History. 1 - 18 Unit.
(Credit as arranged.)

ARTH 610A. Advanced Visual Arts and Museums: Internship I. 3 Units.
First semester of the internship sequence. The intern will work under the supervision of a museum professional to plan and execute a specific project. The student must also obtain a faculty mentor for the project. An internship agreement form must be filed with the department by the end of the first week of classes that includes a brief description of the project. If it is a project to be completed in one semester, a time line should be included as well. The intern must file a mid-term and final report describing their duties and responsibilities and a self-assessment of their performance. A portfolio kept in the department will include the final version of their project as it stands at the end of the semester, as well as examples of drafts and any evaluation received in the course of completing the project. The intern must also keep a journal that tracks their milestones in the execution of their project. The faculty supervisor will solicit a letter of assessment from the museum supervisor immediately upon the close of the internship and in sufficient time to assign a final grade. Prereq: ARTH 610A.

ARTH 610B. Advanced Visual Arts and Museums Internship II. 3 Units.
Second semester of the internship sequence. The intern will either continue with the execution of the project begun in the first semester (ARTH 610A) or, when appropriate, undertake a new project. The intern will work under the supervision of a museum professional, and must obtain a faculty mentor for the project. An internship agreement form must be filed with the department by the end of the first week of classes that includes a brief description of the project. A time line should be included as well. The intern must file a mid-term and final report describing their duties and responsibilities and a self-assessment of their performance. A portfolio kept in the department will include the final version of their project as it stands at the end of the semester, as well as examples of drafts and any evaluation received in the course of completing the project. The intern must also keep a journal that tracks their milestones in the execution of their project. The faculty supervisor will solicit a letter of assessment from the museum supervisor immediately upon the close of the internship and in sufficient time to assign a final grade. Prereq: ARTH 610A.

ARTH 701. Dissertation Ph.D.. 1 - 9 Unit.
(Credit as arranged.) Prereq: Predoctoral research consent or advanced to Ph.D. candidacy milestone.

ARTS Courses

ARTS 101. Design and Color I. 3 Units.
Organizational and structural projects as a basis for the development of style. Studies in line, texture, shape, space, value, color, and two dimensional composition through studio problems, art studio media and techniques.

ARTS 106. Creative Drawing I. 3 Units.
Development of graphic fluency in black and white through direct observation of nature and the model. Drawing as a means of enlarging visual sensitivity using a wide range of media and subject matter. Work from nude model.

ARTS 201. Design and Color II. 3 Units.

ARTS 206. Creative Drawing II. 3 Units.
Continuation of ARTS 106. Advanced work in graphic representation. Development of visual acuity and a personal drawing style while working in color. Work from nude model. Prereq: ARTS 106.

ARTS 210. Enameling and Jewelry I. 3 Units.
Techniques in the application of vitreous enamel on copper and of constructed metal jewelry. Technical skill and suitability of design as applied to the medium.

ARTS 212. Weaving, Fibers, and Textiles I. 3 Units.

ARTS 214. Ceramics I. 3 Units.
The techniques of hand building in pinch, coil and slab methods. Development of sensitivity to design and form. Basic work in stoneware, earthenware, and glazing.

ARTS 216. Painting I. 3 Units.
The creative, conceptual, visual, and technical aspects of painting. Style ranging from naturalism to abstraction. Work in acrylic and mixed media.
ARTS 220. Photography Studio I. 3 Units.
Camera, film, and darkroom techniques. Development of basic black and white perceptual and photographic skills. Darkroom and photographic field and lab work. 35mm camera required.

ARTS 295. Introduction to Art Education. 3 Units.
General history and theories of art education. Development of personal philosophy as basis for teaching art. Topics in professional standards, creativity, aesthetic theory, and art criticism. (Clinical/field experience required.)

ARTS 300. Current Issues in Art Education. 3 Units.
Contemporary issues in Art Education; understanding art goals and standards of National Art Education Association and the Ohio State Department of Education for teachers, students and administrators. Special topics: art and technology, multiculturalism, special populations and classroom management. Offered as ARTS 300 and ARTS 400.

ARTS 302. Architecture and City Design I. 3 Units.
The social, spatial, and aesthetic elements in architecture; the components of the building: the window, door, roof, enclosing walls, and character of interior and exterior space. Projects related to small, intimate scale and residential structures. Lectures, field trips, studio experiences. Recommended ARTS 101 or ARTS 106 courses prior to enrollment. Offered as ARTS 302 or ARTS 402.

ARTS 303. Architecture and City Design II. 3 Units.
The social, spatial, and aesthetic elements of the urban setting of architecture, the organizational components of the city, the path, the node, the edge, and the grid. Projects related to large-scale and public buildings and their relationship to the encompassing visual world. Lectures, field trips, studio experiences. Recommended ARTS 101 or ARTS 106 courses prior to enrollment. Offered as ARTS 303 or ARTS 403.

ARTS 304. Architecture and City Design III. 3 Units.
A study of historic precedents and the social implications of modern and contemporary architecture including analysis and form interpretation as it relates to building and materials technologies. Practical application and synthesis of architectural knowledge through site visits and research of local and regional architecture. Discussions of historic and contemporary architects, engineers and significant architecture and engineering firms. Prereq: ARTS 302 and ARTS 303.

ARTS 305. Study Abroad Paris Architecture: Design & Culture. 3 Units.
Problem Solving is at the very core of Design, and no city has been more inventive when it comes to Problem Solving than Paris. In the mid-nineteenth century when women were not allowed to go into restaurants unaccompanied by men, Paris introduced outdoor cafes; in the seventeenth century when building heights were limited by the lower edge of roof tiles, Mansart introduced a roof with a steep pitch allowing extra height with living space behind the roof tiles; in the Middle Ages when balconies were banned because they extended beyond the building footprint, French doors opened into apartments creating windows that simulated balconies. This 4-week intensive Paris summer course immerses students into a culture that solves architectural problems through a sophisticated appreciation for design, aesthetics and conceptualization. The program introduces students to critical inquiry through the shared principles and theories of Art, Architecture and Design, as experienced in the city of Paris. Using Paris as our classroom, students will visit well-known sites, museums and monuments as well as hidden gems as they explore this major world cultural center. While no art or drawing skills are required, participants at every level will learn how to improve their visual skills through sketching, observation studies and analyses. Each week students will complete a design project; each will explore a unique aspect of French culture. The course offers Global and Cultural Diversity credit and is open to undergraduate students and graduate students. There is no language requirement for this course. Offered as ARTS 305 or ARTS 405.

ARTS 310. Enameling and Jewelry II. 3 Units.

ARTS 312. Weaving, Fibers, and Textiles II. 3 Units.
Continuation of ARTS 212. Exploration of a selected area of textiles in surface design or constructed textiles. Development of a personal aesthetic through design and execution of a series of projects. Prereq: ARTS 212.

ARTS 314. Ceramics II. 3 Units.

ARTS 316. Painting II. 3 Units.
The creative, conceptual, visual and technical aspects of painting. Styles ranging from expressionism, cubism, surrealism and abstraction. Work in acrylic and mixed media leading to the development of personal painting style. Prereq: ARTS 216.

ARTS 320. Photography Studio II. 3 Units.
Continuation of ARTS 220. Advanced theory and black and white techniques. Development of personal aesthetic encouraged. Field work. 35mm camera required. Prereq: ARTS 220.

ARTS 322. Digital Photography I. 3 Units.
ARTS 325. Creative Photography. 3 Units.
Creative photography through photographing and responding to photographs. The question of self-expression and photographic medium explored in the pursuit of understanding images. Prereq: ARTS 220 and ARTS 320 or ARTS 322.

ARTS 350. Multimedia I. 3 Units.
Fundamental concepts and skills for using technology to design, create, express, and present. This project-oriented class will develop knowledge and competencies related to digital imaging, animation, video, multimedia, production and presentation. Offered as ARTS 350 and ARTS 450. Prereq: One from ARTS 101, ARTS 106, ARTS 216, or ARTS 220 or permission of the Director of Art Education.

ARTS 365A. Painting. 3 Units.
Advanced painting projects determined in consultation with instructor. Prereq: ARTS 216 and ARTS 316.

ARTS 365B. Design and Color. 3 Units.
Advanced design projects determined in consultation with instructor. Prereq: ARTS 101 and ARTS 201.

ARTS 365C. Enameling and Jewelry. 3 Units.
Advanced enameling and jewelry projects determined in consultation with instructor. Prereq: ARTS 210 and ARTS 310.

ARTS 365D. B&W Photography Studio. 3 Units.
Advanced black and white projects determined in consultation with instructor. Prereq: ARTS 220 and ARTS 320.

ARTS 365E. Color Studio. 3 Units.
Advanced digital color studio projects determined in consultation with instructor. Prereq: ARTS 210 and ARTS 322.

ARTS 365G. Ceramics. 3 Units.
Advanced ceramics projects determined in consultation with instructor. Prereq: ARTS 214 and ARTS 314.

ARTS 366A. Student Teaching in Art: Pre-K - 6th Grade. 4 Units.

ARTS 366B. Student Teaching in Art: 7th - 12th Grade. 4 Units.

ARTS 385. Clinical/Field Based Experience I. 1 Unit.
Art education students observe and assist art teachers in classes in a variety of public and private educational environments such as local schools, Cleveland Museum of Art. Students study, identify, and analyze differences in art curriculum taught at the various art programs that they observe. Written reports using departmental observation guidelines are required. Prereq: ARTS 295.

ARTS 386. Clinical/Field Based Experience II. 1 Unit.
Art education students become sensitized to serving needs of "special" populations. Observation of educational strategies for teaching learning disabled and/or physically disabled students. Written reports using departmental observation guidelines required. Prereq: ARTS 295.

ARTS 387. Clinical/Field Based Experience III. 1 Unit.
Art education students observe and assist in art programs for artistically gifted students working in specialized art areas (drawing, painting, sculpture, printmaking, art history). Written reports using departmental observation guidelines are required. Prereq: ARTS 295.

ARTS 393. Art Content, Pedagogy, Methodology, and Assessment. 3 Units.
Principles and practices of art instruction in the elementary, middle, and high schools. Emphasis on the integration of art content, methodology, and assessment. Prereq: ARTS 295.

ARTS 395. Introduction to Multimedia Technology. 3 Units.
Fundamental concepts and skills for using technology in art, electronic portfolio development, and teaching and learning. This project-oriented class will develop knowledge and competencies related to digital imaging and video, multimedia production and presentation, the Internet, and social and ethical issues. Prereq: ARTS 220 and ARTS 320. Offered as ARTS 350 and ARTS 420.

ARTS 399. Independent Study in Art Studio. 1 - 3 Unit.
Independent Study in Art Studio; by permit of Director only.

ARTS 400. Current Issues in Art Education. 3 Units.
Contemporary issues in Art Education; understanding art goals and standards of National Art Education Association and the Ohio State Department of Education for teachers, students and administrators. Special topics: art and technology, multiculturalism, special populations and classroom management. Offered as ARTS 300 and ARTS 400.

ARTS 402. Architecture and City Design I. 3 Units.
The social, spatial, and aesthetic elements in architecture; the components of the building: the window, door, roof, enclosing walls, and character of interior and exterior space. Projects related to small, intimate scale and residential structures. Lectures, field trips, studio experiences. Recommended ARTS 101 or ARTS 106 courses prior to enrollment. Offered as ARTS 302 or ARTS 402.

ARTS 403. Architecture and City Design II. 3 Units.
The social, spatial, and aesthetic elements of the urban setting of architecture, the organizational components of the city, the path, the node, the edge, and the grid. Projects related to large-scale and public buildings and their relationship to the encompassing visual world. Lectures, field trips, studio experiences. Recommended ARTS 101 or ARTS 106 courses prior to enrollment. Offered as ARTS 303 or ARTS 403.
ARTS 405. Study Abroad Paris Architecture: Design & Culture. 3 Units.
Problem Solving is at the very core of Design, and no city has been more inventive when it comes to Problem Solving than Paris. In the mid-nineteenth century when women were not allowed to go into restaurants unaccompanied by men, Paris introduced outdoor cafes; in the seventeenth century when building heights were limited by the lower edge of roof tiles, Mansart introduced a roof with a steep pitch allowing extra height with living space behind the roof tiles; in the Middle Ages when balconies were banned because they extended beyond the building footprint, French doors opened into apartments creating windows that simulated balconies. This 4-week intensive Paris summer course immerses students into a culture that solves architectural problems through a sophisticated appreciation for design, aesthetics and conceptualization. The program introduces students to critical inquiry through the shared principles and theories of Art, Architecture and Design, as experienced in the city of Paris. Using Paris as our classroom, students will visit well-known sites, museums and monuments as well as hidden gems as they explore this major world cultural center. While no art or drawing skills are required, participants at every level will learn how to improve their visual skills through sketching, observation studies and analyses. Each week students will complete a design project; each will explore a unique aspect of French culture. The course offers Global and Cultural Diversity credit and is open to undergraduate students and graduate students. There is no language requirement for this course. Offered as ARTS 305 or ARTS 405.

ARTS 415. Multimedia I. 3 Units.
Fundamental concepts and skills for using technology to design, create, express, and present. This project-oriented class will develop knowledge and competencies related to digital imaging, animation, video, multimedia, production and presentation. Offered as ARTS 350 and ARTS 415.

ARTS 445. Seminar for Art Teachers. 4 Units.
For art education majors and teacher licensure candidates. Principles and practice in school art instruction grades Pre-K through 12th grade. Organization and management of the art program that incorporates writing sequential art curriculum that integrates art production, art history, appreciation, and criticism. Planning, development, and evaluation of teaching materials, lessons, and units. The seminar includes discussion of professional issues, ethics, art advocacy, and classroom management. Counts as SAGES Senior Capstone. Prereq: ARTS 295 or ARTS 602, and ARTS 393 or ARTS 493. Coreq: ARTS 366A and ARTS 466A or ARTS 466A and ARTS 466B.

ARTS 466A. Student Teaching in Art: Pre-K - 6th Grade. 4 Units.
Teaching art for early childhood, elementary, and middle school students in a school setting. Includes art curriculum development, implementation, and assessment. Professional standards and practices. Offered as ARTS 366A and ARTS 466A. Prereq: ARTS 385, ARTS 386, ARTS 387, ARTS 400, ARTS 493, and ARTS 602. Coreq: ARTS 465 and ARTS 466B.

ARTS 466B. Student Teaching in Art: 7th - 12th Grade. 4 Units.
Teaching adolescents and young adults art in a school setting. Includes art curriculum development, implementation, assessment and classroom management. Professional standards and practices. Offered as ARTS 366B and ARTS 466B. Prereq: ARTS 385, ARTS 386, ARTS 387, ARTS 400, ARTS 493, and ARTS 602. Coreq: ARTS 465 and ARTS 466A.

ARTS 493. Art Content, Pedagogy, Methodology, and Assessment. 3 Units.
Growth and development of image making from Pre-K through young adult. Principles and practices of art instruction in grades Pre-K through 12th grade. Issues in art education. Curriculum construction, implementation and assessment of art lessons that address content areas of art production, art history, art appreciation, and art criticism. Clinical field experiences required. Offered as ARTS 393 and ARTS 493. Prereq: ARTS 602.

ARTS 495. Introduction to Multimedia Technology. 3 Units.
Fundamental concepts and skills for using technology in art, electronic portfolio development, and teaching and learning. This project-oriented class will develop knowledge and competencies related to digital imaging and video, multimedia production and presentation, the Internet, information processing, computer systems and management as they relate to art education. Offered as ARTS 395 and ARTS 495.

ARTS 497. Summer Workshop in Art Education. 3 Units.
A current art education issue is covered in depth.

ARTS 602. Study in Art Education. 3 Units.
General history and theories of art education. Development of personal philosophy as basis for teaching art. Topics in professional standards, creativity, aesthetic theory, and art criticism. Students produce an art education research paper. Clinical/Field experiences are required.

ARTS 605. Final Creative Thesis. 1 - 3 Unit.
Students receive individual guidance for an approved self-designed creative project from program faculty members. A public exhibition or presentation is required. By permit only.

Asian Studies Program

Asian studies has become an increasingly important area of study in North American colleges and universities. This is due in part to a growing acknowledgment that Asian cultures are of significance both regionally and globally. The Asian Studies Program offers students the opportunity to explore these cultures from a multidisciplinary perspective so that they are able to understand the social, cultural, political, and other forces that shape and have shaped Asian nations.

The Asian Studies Program draws on faculty and courses from such departments as anthropology, art history and art, economics, modern languages and literatures, history, philosophy, political science, and religious studies. A current list of approved courses is available from the program advisor. Departmental seminars and senior capstone courses in the Asian Studies Program may count toward the completion of the SAGES General Education Requirements.

The undergraduate program in Asian studies offers a major and a minor. Students are encouraged to take courses in different disciplines in order to obtain broad exposure to the languages, literature, art, culture, religious traditions, and political, economic, and social institutions of Asian countries. The Asian Studies Program also offers an honors program to qualified majors.

In addition to course offerings, the Asian Studies Program sponsors extracurricular activities that enhance the formal study of Asia and give students additional opportunities to explore and understand Asia’s importance in the global community. The program sponsors lectures and films and administers a Web site devoted to Asia. It also encourages students to participate in study abroad programs in Asian countries and
to utilize Asian resources at the Cleveland Museum of Art and other local institutions.

Undergraduate Program

Major

The Asian studies major, which leads to a Bachelor of Arts degree, consists of 31 credit hours, including:

- At least 16 credit hours (two years) of Chinese or Japanese language
- 15 credit hours of Asia-related courses, selected in consultation with the program advisor

The 15 hours in Asia-related courses must be at the 200 or 300 level and come from at least three different departments.

Minor

The minor in Asian studies consists of 18 credit hours of Asia-related courses, selected in consultation with the program advisor. Only one year (8 credits) of language study (Japanese or Chinese) counts toward the minor.

The 18 hours in Asia-related courses must be at the 200 or 300 level and come from at least three different departments.

Honors Program

Asian Studies Honors is a semester-long program for Asian studies majors, normally taken during the senior year, which involves researching and writing an honors thesis. Honors program requirements include the completion of 12 semester hours of approved Asia-related courses, at least two semesters of study of an Asian language, and maintenance of a GPA of at least 3.0 overall and 3.2 in Asian studies courses.

A participating student enrolls in ASIA 398 Honors Thesis and writes a thesis under the direction of an Asian studies faculty member. The student also receives guidance from a second reader, who must be a member of the Asian Studies Program. A third reader, who need not be a member of the Asian Studies Program, is optional. Each student must maintain regular contact with the supervising faculty member in the various stages of researching and writing the thesis. Detailed guidelines and deadlines for the course are available from the program advisor.

Courses Available in East Asian Studies

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<th>Language Courses:</th>
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<td>CHIN 201 Intermediate Chinese I 4</td>
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<td>CHIN 202 Intermediate Chinese II 4</td>
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<td>CHIN 203 Intermediate Chinese III 4</td>
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<td>CHIN 240 Modern Chinese Literature in Translation 3</td>
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<td>CHIN 250 Classical Chinese Literature in Translation 3</td>
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<td>CHIN 301 Advanced Chinese I 4</td>
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<td>CHIN 399 Independent Study 1 - 3</td>
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<td>JAPN 351 Contemporary Japanese Texts II 3</td>
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<td>JAPN 355 Modern Japanese Novels and the West 3</td>
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<td>JAPN 397 Senior Thesis I 3</td>
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<td>JAPN 398 Senior Thesis II 3</td>
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<td>JAPN 399 Independent Study 1 - 3</td>
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Anthropology:

| ANTH 312 Ethnography of Southeast Asia 3 |
| ANTH 317 Asian Medical Systems 3 |
| ANTH 331 The Most Ancient Near East 3 |
| ANTH 333 Roots of Ancient India: Archaeology of South Asia 3 |
| ANTH 352 Japanese Culture and Society 3 |
| ANTH 353 Chinese Culture and Society 3 |
| ANTH 354 Health and Healing in East Asia 3 |

Asia:

| ASIA 235 Asian Cinema and Drama 3 |
| ASIA 288 Imperial China: The Great Qing 3 |
| ASIA 289 Reform, Revolution, Republics: China 1895 to Present 3 |
| ASIA 398 Honors Thesis 1 - 4 |
| ASIA 399 Independent Study 1 - 3 |

Art History:

| ARTH 203 The Arts of Asia 3 |
| ARTH 204 Arts of East Asia 3 |
| ARTH 208 Arts of Japan 3 |
| ARTH 302 Buddhist Art in Asia 3 |
| ARTH 307 Arts of China 3 |
| ARTH 340 Issues in the Art of China 3 |
| ARTH 341 Issues in the Art of Japan 3 |
| ARTH 342 Issues in Indian and Southeast Asian Art 3 |
| ARTH 398 Independent Study in Art History 1 - 3 |

History:

| HSTY 137 Introduction to Modern South Asia 3 |
| HSTY 157 Women’s Histories in South Asia 3 |
| HSTY 285 Modern Japan 3 |
HSTY 288 Imperial China: The Great Qing 3
HSTY 289 Reform, Revolution, Republics: China 1895 to Present 3
HSTY 324 Issues in Indian and Southeast Asian Art 3
HSTY 383 Readings in PRC History 3
HSTY 385 Readings in Society and Culture in Modern Chinese History 3

Political Science:
PHIL 321 Advanced Indian Philosophy 3
POSC 370C The United States and Asia 3
POSC 370D The Politics of China 3
POSC 370H China’s Foreign Policy 3

Religious Studies
RLGN 217 Buddhism 3
RLGN 306 Interpreting Buddhist Texts 3
RLGN 108 The History of Yoga: The Yoga of Transformation and the Transformation of Yoga 3
RLGN 204 Introduction to Asian Religions 3
RLGN 216 Hinduism I: The Vedic, Epic and Puranic Periods 3
RLGN 237 Religion and Dance in South Asia 3
WLIT 225 Japanese Popular Culture 3
WLIT 235 Asian Cinema and Drama 3
WLIT 245 Classical Japanese Literature in Translation 3
WLIT 255 Modern Japanese Literature in Translation 3
WLIT 345 Japanese Women Writers 3
WLIT 355 Modern Japanese Novels and the West 3

* These courses are simultaneously offered at the 400-level for graduate students.

Program Advisory Committee

Ananya Dasgupta, PhD
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(Yale University)
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William E. Deal, PhD
(Harvard University)
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Assistant Professor, Department of Art History and Art

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(Ohio State University)
Visiting Assistant Professor, Department of Political Science

Lihong Shi, PhD
(Tulane University)
Assistant Professor, Department of Anthropology

Courses

ASIA 132. Introduction to Modern East Asia. 3 Units.
HSTY 132 is an introduction to the histories of modern China, Japan, Korea, and Vietnam from the “dawn of the global world” in the 17th century to present. Taken together these regions make up the geographic and cultural unit commonly referred to as “East Asia.” Over the course of the term, we will investigate the usefulness of this concept of “East Asia” by examining its origins as well as the sometimes convergent, sometimes divergent relations between this region and the rest of the world. We will also challenge the stereotype of a monolithic and static East Asia and see to develop a critical understanding of the internal and external forces integrating and dividing this region. We will examine how international diplomatic, commercial, military, religious, and cultural relationships shaped the individual countries as well as their relationships with each other and the world. The course sweeps over large regions of time and space. It aims to put the contemporary discussion of globalization into historical perspective by examining the long-lasting interactions of East Asian countries with each other and the rest of the world. These connections were economic, political, cultural, and psychological. Topics include: global silver and trade flows, warfare and military technology, imperial domination and revolutionary resistance, and the role of historical memory, as in Nanking or Hiroshima. Sources include historical documents, pictures, films, and memoirs. As we move through the course material our goal is not to gain total knowledge of modern East Asia, nor of China, Japan, Korea nor Vietnam. Rather, by the end of the term you should be able to identify some of the main organizing themes in modern East Asian history and develop a greater understanding of the construction and nature of historical knowledge itself. Offered as HSTY 132 and ASIA 132.
ASIA 133. Introduction to Chinese History and Civilization. 3 Units.
This course explains the continuities and discontinuities in the history of China by stressing the development and distinctive adaptations of cultural, religious, and political patterns from the origins of the Chinese civilization to the present. By focusing on major cultural, socioeconomic, and political issues such as Confucianism, Buddhism, trade relations, imperialism, and intellectual discourse in the overall Asian context (with particular reference to Korea and Japan), we discuss the historical development of China and its situation on entering the 21st century. Taking into account the key historical events in the last century, we examine the emergence of China as a modern nation-state and the fundamental transformation of Chinese society in the postwar period. Offered as ASIA 133 and HSTY 133.

ASIA 235. Asian Cinema and Drama. 3 Units.
Introduction to major Asian film directors and major traditional theatrical schools of India, Java/Bali, China, and Japan. Focus on the influence of traditional dramatic forms on contemporary film directors. Development of skills in cross-cultural analysis and comparative aesthetics. Offered as ASIA 235 and WLIT 235.

ASIA 288. Imperial China: The Great Qing. 3 Units.
This course is an introduction to the history of Imperial China, from the fall of the Ming Dynasty in 1644 to the creation of the Chinese republic in 1912. We will explore the major historical transformations (political, economic, social, and cultural) of the last imperial dynasty, the Qing (1644-1911), and develop an understanding of the major social, political, economic, and intellectual cultural forces shaping the formation of modern China. Contrary to commonly-held ideas in both West and in China that traditional Chinese society was timeless or stagnant, historians now see dramatic and significant changes during this period—to the economy, to gender relations, to religion, and to many other aspects of life. This course surveys the social, political, economic, and cultural history of this era, with emphasis on recent research. The main goals of the course will be to acquaint students with the key changes and to show the interplay between economic, social, and cultural changes on the one hand and political developments on the other. By the end of the semester you should have a good sense of how Chinese society was transformed over the course of the 17th through early 20th centuries. The topics we will discuss include urbanization and commerce; gender, family and kinship; education and the examination system; opium and free trade; and ethnicity and nationalism. Offered as ASIA 288 and HSTY 288.

ASIA 289. Reform, Revolution, Republics: China 1895 to Present. 3 Units.
Completes a two-term sequence of the Chinese history survey, although HSTY 288 is not a prerequisite for this course. Beginning with the First Sino-Japanese War (1895), we review the historical development of intellectual discourse, public reaction, and political protest in later Imperial China through the creation of the People’s Republic in 1949 forward to contemporary times. In contrast to the conventional description of China from a Western point of view, this course tries to explain the emergence of modern China in the context of its intellectual, political, and socioeconomic transformation as experienced by Chinese in the late 19th and into the 20th century. By discussing the influence of the West, domestic rebellions, and political radicalism, we examine how the Chinese state and society interacted in search for modernization and reforms, how these reforms were continued during the Republican period, and to what extent historical patterns can be identified in China’s present-day development. Offered as ASIA 289 and HSTY 289.

ASIA 398. Honors Thesis. 1 - 4 Unit.
Intensive study of a topic or problem under the direction of a faculty member, resulting in the preparation of an honors thesis.

ASIA 399. Independent Study. 1 - 3 Unit.
Tutorial in Asian Studies.

Department of Astronomy

The Department of Astronomy offers two undergraduate degrees, a Bachelor of Science and a Bachelor of Arts. The primary difference between them is that the BA degree allows somewhat more flexibility in choice of courses. The department offers a minor in astronomy as well.

The curriculum emphasizes a broad and substantial education in astronomy, physics and mathematics. A faculty actively engaged in research provides first-rate instruction and opportunities for undergraduate involvement in research.

A bachelor’s degree in astronomy can prepare students for graduate study in astronomy (about 50% of our graduates take this path), but those who seek employment in other fields can fill the same jobs as physics and computer science majors.

The department offers a graduate program leading to the degree of Doctor of Philosophy in astronomy. Current research provides opportunities in observational and theoretical studies of galaxy formation and evolution, galaxy cluster evolution, astronomical instrumentation, and cosmology.

Facilities

The Department of Astronomy operates the Kitt Peak Station of the Warner and Swasey Observatory near Tucson, Arizona, home of the Burrell Schmidt telescope. This telescope is used for surveys and ultra-deep imaging with a large format CCD. The department is also a member of the Sloan Digital Sky Survey, which operates a 2.5m telescope with multi-object spectrographs and wide-field imager at Apache Point. The third incarnation of this survey includes a Baryon Oscillation survey of the large-scale structure of the universe and a spectroscopic survey of the Milky Way galaxy. A 9.5-inch refractor permanently mounted on the roof of the A. W. Smith Building is available for use by students. The department also houses a research and instruction computer laboratory and has access to the university’s high-performance computing cluster.

BS Astronomy (p. 47) I BA Astronomy (p. 49) I Minor (p. 50)

Bachelor of Science in Astronomy

The Bachelor of Science in astronomy requires 122 credit hours, including 20 hours in astronomy, 43 hours in physics, 14 hours in math, and 12 hours in technical electives.

ASRT 221 Stars and Planets 3
ASRT 222 Galaxies and Cosmology 3
ASRT 306 Astronomical Techniques 3
ASRT 309 Astrophysics Seminar I 1
ASRT 310 Astrophysics Seminar II 1
ASRT 311 Stellar Physics 3
ASRT 323 The Local Universe 3
ASRT 328 Cosmology and the Structure of the Universe 3
Additional required courses

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<td>General Physics I - Mechanics</td>
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<td>PHYS 326</td>
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<td>PHYS 331</td>
<td>Introduction to Quantum Mechanics I</td>
<td>3</td>
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Approved technical electives (these can be from astronomy, chemistry, mathematics, statistics, physics, or earth, environmental, and planetary sciences; check with advisor for complete list)

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<td>EEPS 345</td>
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<td>PHYS 316</td>
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<td>PHYS 349</td>
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Total Units: 86

Six hours of mathematics and natural science (physics) are double counted towards the SAGES breadth requirements, and one required math course is double counted towards the SAGES Quantitative Reasoning requirement.

Sample Plan of Study: Bachelor of Science in Astronomy

**First Year**

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**Second Year**

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<tr>
<td>Introduction to Modern Physics (PHYS 221)</td>
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<td>Advanced Instrumentation Laboratory (PHYS 204)</td>
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**Third Year**

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<td>Thermodynamics and Statistical Mechanics (PHYS 313)</td>
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<td>Arts &amp; Humanities II</td>
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<td>Social Science II</td>
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<td>Cosmology and the Structure of the Universe (ASTR 328)</td>
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**Fourth Year**

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<td>Introduction to Quantum Mechanics I (PHYS 331)</td>
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<td>Astronomy Capstone Project (ASTR 351)</td>
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<tr>
<td>Astronomy Capstone Project (ASTR 351)</td>
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<td>Social Science II</td>
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Total Units in Sequence: 126-130
Selected students may be invited to take PHYS 123 Physics and Frontiers I - Mechanics, PHYS 124 Physics and Frontiers II - Electricity and Magnetism, in place of PHYS 121 General Physics I - Mechanics, PHYS 122 General Physics II - Electricity and Magnetism.

ASTR 306 Astronomical Techniques, ASTR 311 Stellar Physics, ASTR 323 The Local Universe, and ASTR 328 Cosmology and the Structure of the Universe are taught every other year only.

A SAGES Capstone Experience is required of all students. The BS does not require the astronomy capstone but only that a capstone be taken. The number of hours shown assumes the astronomy capstone with 1 hour in the senior fall semester and 3 hours in the senior spring semester. If another capstone is taken, the number of hours may be different.

* Suggested, but not required for the major

Bachelor of Arts in Astronomy

The Bachelor of Arts in astronomy requires 120 credit hours, including 17 hours in astronomy, 29 hours in physics, 14 hours in math, and 6 hours in technical electives.

**Major Courses**

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<tr>
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<td>Galaxies and Cosmology</td>
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<td>ASTR 310</td>
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<td>Cosmology and the Structure of the Universe</td>
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**Additional required courses**

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**Approved technical electives (consult advisor for other acceptable classes)**

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<tr>
<td>PHYS 204</td>
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<td>PHYS 316</td>
<td>Introduction to Nuclear and Particle Physics</td>
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<td>PHYS 325</td>
<td>Electricity and Magnetism II</td>
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**PHYS 332**  Introduction to Quantum Mechanics II

**Total Units** 75

Six hours of mathematics and natural science (physics) are double counted towards the SAGES breadth requirements, and one required math course is double counted towards the SAGES Quantitative Reasoning requirement.

Sample Plan of Study: Bachelor of Arts in Astronomy

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<th>Units</th>
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<th>Spring</th>
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**Second Year | Units | Fall | Spring |
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**Third Year | Units | Fall | Spring |
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<tr>
<td>Stellar Physics (ASTR 311)</td>
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<td>Arts &amp; Humanities I</td>
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<td>Physical Optics (PHYS 326)</td>
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Technical Elective 3
Year Total: 15 15

Fourth Year

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<td>Astrophysics Seminar I (ASTR 309)</td>
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<td>Introduction to Quantum Mechanics I (PHYS 331)</td>
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<td>Global and Cultural Diversity</td>
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<td>Astronomy Capstone Project (ASTR 351)</td>
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Total Units in Sequence: 100-104

a 300-level astronomy courses: three of the following four are required: ASTR 306, ASTR 311, ASTR 323, ASTR 328.
b A SAGES Capstone Experience is required of all students. The BA in astronomy does not require the astronomy capstone but only that a capstone be taken. The number of hours shown assumes the astronomy capstone with 1 hour in the senior fall semester and 3 hours in the senior spring semester. If another capstone is taken, the number of hours may be different.
* Suggested, but not required for the major.

Minor in Astronomy

The requirements for the minor in astronomy are as follows:

One of the following: 4

| PHYS 115 | Introductory Physics I |
| PHYS 121 | General Physics I - Mechanics |
| PHYS 123 | Physics and Frontiers I - Mechanics |

One of the following: 4

| PHYS 116 | Introductory Physics II |
| PHYS 122 | General Physics II - Electricity and Magnetism |
| PHYS 124 | Physics and Frontiers II - Electricity and Magnetism |
| ASTR 221 | Stars and Planets 3 |
| ASTR 222 | Galaxies and Cosmology 3 |

One of the following: 3

| ASTR 306 | Astronomical Techniques |
| ASTR 311 | Stellar Physics |
| ASTR 323 | The Local Universe |
| ASTR 328 | Cosmology and the Structure of the Universe |

Total Units 17

Graduate Program

The PhD degree in astronomy is granted to those students who have shown an extensive knowledge of advanced astronomy and the ability to do original research. The student is required to pass a general qualifying examination in astronomy, usually taken at the end of the second year. The student must then prepare a dissertation based on the results of independent research. A PhD candidate must also satisfy the general requirements of the School of Graduate Studies.

Full-time graduate students who maintain satisfactory academic performance while pursuing the PhD degree in astronomy normally receive a stipend for teaching and/or research, which includes full tuition and a monthly amount sufficient to cover living expenses.

Department Faculty

Stacy S. McGaugh, PhD
(University of Michigan)
Professor and Chair, Director of the Warner and Swasey Observatory
Galaxy formation and evolution, low surface brightness galaxies, cosmology, dark matter, and gravity

R. Earle Luck, PhD
(University of Texas, Austin)
Worcester R. and Cornelia B. Warner Professor of Astronomy
Stellar and galactic chemical evolution; stellar spectrophotometry

J. Christopher Mihos, PhD
(University of Michigan)
Professor
Galaxy evolution; interacting and merging galaxies; galaxy clusters; computational and observational astronomy

Heather L. Morrison, PhD
(Australian National University)
Professor
Galaxy formation via observational studies of the Milky Way and nearby galaxies; dark matter

Idit Zehavi, PhD
(Racah Institute of Physics, Hebrew University of Jerusalem)
Associate Professor
Cosmology and the large-scale structure of the universe; galaxy biasing; galaxy formation and evolution; structure formation; clustering of galaxies; cosmic flows.

Secondary Faculty

John Ruhl, PhD
(Princeton University)
Professor, Department of Physics
Experimental astrophysics and cosmology

Glenn D. Starkman, PhD
(Stanford University)
Professor, Department of Physics
Theoretical cosmology; particle physics; astrophysics

Adjunct Faculty

Jeffery R. Kriessler, PhD
(Michigan State University)
Adjunct Assistant Professor
Substructure in galaxy clusters
Courses

ASTR 151. Doing Astronomy. 1 Unit.
This course is intended to introduce students to how astronomy is done. The course will focus on the astronomical research process, the scientific community, and on career paths in astronomy. Course activities will include readings and class discussions focusing on various topics in modern astronomy, including ongoing research activity in the department. This course is largely intended for first- and second-year students considering majoring or minoring in astronomy, or pursuing a career in astronomy. Prereq: First- or second-year academic standing.

ASTR 201. The Sun and its Planets. 3 Units.
An overview of the solar system; the planets and other objects that orbit about the Sun and the Sun itself as the dominant mass and the most important source of energy in the solar system. Concepts and the development of our knowledge will be emphasized. Not available for credit to astronomy majors.

ASTR 202. Stars, Galaxies, and the Universe. 3 Units.
Stellar structure, energy sources, and evolution, including red giants, white dwarfs, supernovae, pulsars, and black holes. Stellar populations in the Milky Way and external galaxies. The universe and its evolution. Not available for credit to astronomy majors.

ASTR 204. Einstein's Universe. 3 Units.
This course is intended to introduce the non-scientist to the concepts of modern cosmology—the structure and evolution of the universe. No mathematical background beyond simple algebra is needed.

ASTR 206. Life in the Universe. 3 Units.
This course is intended to introduce the non-scientist to the field of astrobiology - the interdisciplinary study of, and the search for, extraterrestrial life and the conditions for extraterrestrial life in the Universe. We will explore questions such as: How did life begin on Earth? What conditions are necessary for life to survive? What conditions are required for the long-term habitability of the Earth? Can life exist elsewhere in our Galaxy? Students may receive credit for ASTR 206 or USNA 217 (Astrobiology), but not for both.

ASTR 221. Stars and Planets. 3 Units.

ASTR 222. Galaxies and Cosmology. 3 Units.

ASTR 306. Astronomical Techniques. 3 Units.
This course covers the techniques astronomers use to conduct research, including observations using ground-and space-based telescopes, computer simulations and other numerical methods, and statistical data mining of large on-line astronomical datasets. Offered as ASTR 306 and ASTR 406. Counts as SAGES Departmental Seminar. Prereq: ASTR 222.

ASTR 309. Astrophysics Seminar I. 1 Unit.
Selected topics in astronomy not covered ordinarily in courses. Presentation of talks by the students.

ASTR 310. Astrophysics Seminar II. 1 Unit.
Selected topics in astronomy not covered ordinarily in courses. Presentation of talks by students.

ASTR 311. Stellar Physics. 3 Units.
Radiative transfer, atomic and molecular opacities, and the observable properties of stars. Stellar interiors, nuclear processes, and energy generation. The evolution of stars of varying mass and production of the elements within supernovae explosions. Offered as ASTR 311 and ASTR 411. Prereq: ASTR 222.

ASTR 323. The Local Universe. 3 Units.

ASTR 328. Cosmology and the Structure of the Universe. 3 Units.

ASTR 333. Dark Matter. 3 Units.
This course will systematically explore the evidence for dark matter in the universe. Necessary physical theory and astronomical concepts will be developed as appropriate. Topics to be covered include gravitational dynamics, gravitational lensing, and hydrostatic equilibrium as probes of the gravitational potentials of extragalactic systems. Examples include the rotation curves of spiral galaxies, the Oort discrepancy in the local Galactic disk, the dynamics of pressure supported dwarf and giant elliptical galaxies, and the Local Group timing problem. In clusters of galaxies, the mass discrepancy is illustrated separately by measured velocity dispersions, the hydrostatic equilibrium of the hot intracluster medium, and both strong and weak gravitational lensing. On cosmic scales, the course will address evidence from the gravitating and baryonic mass content of the universe, the growth of large scale structure from the initially smooth cosmic microwave background, and the existence of large voids and large scale bulk flows. The course will describe the various dark matter halo models commonly employed and introduce the techniques of mass modeling. We will examine hypotheses for the nature of dark matter, both baryonic and non-baryonic, and discuss strategies for experimental detection of plausible dark matter candidates. Theories that seek to explain these discrepancies by modifying the Law of Gravity rather than invoking dark matter will be explored. Offered as ASTR 333 and ASTR 433. PHYS 310 or requisites not met permission.

ASTR 351. Astronomy Capstone Project. 1 - 3 Unit.
A two semester course (1 hour in the Fall Semester and either 2 or 3 hours in the Spring Semester) for students desiring a Capstone Experience in astronomy. Students pursue a project based on experimental, theoretical or teaching research under the supervision of an astronomy faculty member. A departmental Capstone Project Committee must approve all project proposals (by the end of the Fall Semester) and this same committee will receive regular oral and written progress reports. Final results are presented at the end of the semester as a paper in a style suitable for publication in a professional journal as well as an oral report in a public symposium. Counts as SAGES Senior Capstone. Prereq: ASTR 222.

ASTR 369. Undergraduate Research. 1 - 3 Unit.
Supervised research on topics of interest. Can be used as a thesis course if desired. Students may register more than once for a maximum of 9 credits overall (1-3 credits each semester).
ASTR 396. Special Topics in Astronomy. 1 - 3 Unit.
Open to astronomy majors only.

ASTR 406. Astronomical Techniques. 3 Units.
This course covers the techniques astronomers use to conduct research, including observations using ground- and space-based telescopes, computer simulations and other numerical methods, and statistical data mining of large on-line astronomical datasets. Offered as ASTR 306 and ASTR 406. Counts as SAGES Departmental Seminar.

ASTR 411. Stellar Physics. 3 Units.
Radiative transfer, atomic and molecular opacities, and the observable properties of stars. Stellar interiors, nuclear processes, and energy generation. The evolution of stars of varying mass and production of the elements within supernova explosions. Offered as ASTR 311 and ASTR 411.

ASTR 423. The Local Universe. 3 Units.

ASTR 428. Cosmology and the Structure of the Universe. 3 Units.
Distances to galaxies. The content of the distant universe. Large scale structure and galaxy clusters. Physical cosmology. Structure and energy formation and evolution. Testing cosmological models. Offered as ASTR 328, PHYS 328, ASTR 428, and PHYS 428.

ASTR 433. Dark Matter. 3 Units.
This course will systematically explore the evidence for dark matter in the universe. Necessary physical theory and astronomical concepts will be developed as appropriate. Topics to be covered include gravitational dynamics, gravitational lensing, and hydrostatic equilibrium as probes of the gravitational potentials of extragalactic systems. Examples include the rotation curves of spiral galaxies, the Oort discrepancy in the local Galactic disk, the dynamics of pressure supported dwarf and giant elliptical galaxies, and the Local Group timing problem. In clusters of galaxies, the mass discrepancy is illustrated separately by measured velocity dispersions, the hydrostatic equilibrium of the hot intracluster medium, and both strong and weak gravitational lensing. On cosmic scales, the course will address evidence from the gravitating and baryonic mass content of the universe, the growth of large scale structure from the initially smooth cosmic microwave background, and the existence of large voids and large scale bulk flows. The course will describe the various dark matter halo models commonly employed and introduce the techniques of mass modeling. We will examine hypotheses for the nature of dark matter, both baryonic and non-baryonic, and discuss strategies for experimental detection of plausible dark matter candidates. Theories that seek to explain the observed mass discrepancies by means of modifying the Law of Gravity rather than invoking dark matter will be explored. Offered as ASTR 333 and ASTR 433.

ASTR 497. Special Topics in Astronomy. 1 - 3 Unit.

ASTR 528. Thesis M.S.. 1 - 18 Unit.
(Credit as arranged.)

ASTR 701. Dissertation Ph.D.. 1 - 9 Unit.
(Credit as arranged.) Prereq: Predoctoral research consent or advanced to Ph.D. candidacy milestone.

Biochemistry

The College of Arts and Sciences awards the Bachelor of Arts and Bachelor of Science degrees in biochemistry. The required courses for the majors and minor are offered by the Department of Biochemistry in the School of Medicine. For details about the department’s undergraduate programs, please consult the Department of Biochemistry (http://bulletin.case.edu/schoolofmedicine/biochemistry/undergraduatetext) section of this bulletin.

Department of Biology

The mission of the Department of Biology at Case Western Reserve University is to promote research programs of national and international prominence and to provide strong undergraduate and graduate educational programs that emphasize integrative approaches to biological problems. In doing so, our programs support preparation and professional development for careers related to the biological and health sciences.

The department offers courses leading to the degrees of Bachelor of Science, Bachelor of Science in Systems Biology, Bachelor of Arts, Master of Science, and Doctor of Philosophy. Cooperative programs between the Department of Biology and the Case Western Reserve University School of Medicine, the Cleveland Museum of Natural History, the Cleveland Botanical Garden, the Cleveland Metroparks Zoo, the Holden Arboretum, the Cleveland Institute of Art, and other departments in Case Western Reserve University significantly extend the range of resources available to biology students. Undergraduate students are encouraged to conduct individual supervised research projects with biology faculty and with faculty in cooperating departments. A supervised research project is required of all students in the BS biology program.

The undergraduate programs in biology provide excellent preparation for graduate or professional schools, including medical, dental, and veterinary schools and the many specialized graduate programs in the biological sciences. A biology degree also prepares students for careers in industry and government. For students interested in biotechnology—a field with growing career opportunities—the department offers elective sequences within the BA and BS degrees.

In addition to formal courses for credit, the department offers weekly seminars during the academic year, presenting recent advances in biology. These seminars are held every Thursday at 4:15 p.m. and are open to the university community.

BA Biology (p. 53) | BS Biology (p. 55) | Teacher Licensure (p. 54) | BS Systems Biology (p. 57) | Minors (p. 59)

Undergraduate Programs

Majors

Major programs share a core of foundation courses and provide options for specialization in a variety of areas, including biotechnology and genetic engineering, molecular and cellular biology, genetics, immunology, chemical biology, physiology and biophysics, neurobiology and animal behavior, developmental biology, population biology, ecology, and environmental science. Theoretical, mathematical, and computational approaches to these fields are emphasized in the Systems Biology BS program. Individual research projects form a significant part of the curriculum for many undergraduates in all programs, and are specifically required for students in the Biology BS program. Advanced biology
majors may register, with permission, for graduate-level courses in the department and in the School of Medicine.

The department offers programs leading to the BA and BS degrees. Thirty hours of biology are required for the Biology BA, 39 hours for the Biology BS, and 30 hours for the Systems Biology BS. Ordinarily, all students begin their biology programs in the freshman year. All students must complete the SAGES seminar and General Education Requirements (GER) of the College of Arts and Sciences. While some BIOL courses serve as SAGES Departmental Seminars or SAGES Capstones, none of these are required courses for biology degree candidates, with the specific exception of BIOL 388S Undergraduate Research - SAGES Capstone for the Biology BS degree. A Biology BA student, for example, is free to take a non-BIOL SAGES Departmental Seminar or SAGES Capstone course, assuming that prerequisites are met (or waived by the instructor).

**Bachelor of Arts in Biology**

The Biology BA degree program provides a general background in biology, and has the most flexible scheduling of the three biology degrees offered. It is especially recommended for students who are pre-professional, have multiple majors, intend to do a junior year abroad or an internship program, or have significant extracurricular commitments (e.g., varsity athletics, student government, Greek life, or other campus involvement). Since the Biology BA degree does not formally require undergraduate research, students interested in graduate research careers should plan to take at least one semester of undergraduate research as an elective (BIOL 388S Undergraduate Research - SAGES Capstone for the Biology BS degree). A Biology BA student, for example, is free to take a non-BIOL SAGES Departmental Seminar or SAGES Capstone course, assuming that prerequisites are met (or waived by the instructor).

### Biology core courses

- **BIOL 214** Genes, Evolution and Ecology 3
- **BIOL 214L** Genes, Evolution and Ecology Lab 1
- **BIOL 215** Cells and Proteins 3
- **BIOL 215L** Cells and Proteins Laboratory 1
- **BIOL 216** Development and Physiology 3
- **BIOL 216L** Development and Physiology Lab 1

### One genetics course

- **BIOL 326** Genetics (effective Fall 2014; previously a cell/molecular elective) 3

### One course from any two of the following three subject areas (breadth requirement)

- Cell and molecular biology
  - **BIOL 308** Molecular Biology
  - **BIOL 316** Fundamental Immunology
  - **BIOL 324** Introduction to Stem Cell Biology
  - **BIOL 325** Cell Biology
  - **BIOL 328** Plant Genomics and Proteomics
  - **BIOL 334** Structural Biology
  - **BIOL 342** Parasitology
  - **BIOL 343** Microbiology
  - **BIOL 365** Evo-Devo: Evolution of Body Plans

- Organismal biology
  - **BIOL 223** Vertebrate Biology
  - **BIOL 302** Human Learning and the Brain
  - **BIOL 318** Introductory Entomology

### Biology electives (excluding 100-level courses, BIOL 240, BIOL 250, 3-6 BIOL 251, and BIOL 390)

- **BIOL 223** Vertebrate Biology
- **BIOL 300** Dynamics of Biological Systems: A Quantitative Introduction to Biology
- **BIOL 301** Biotechnology Laboratory: Genes and Genetic Engineering
- **BIOL 304** Fitting Models to Data: Maximum Likelihood Methods and Model Selection
- **BIOL 305** Herpetology
- **BIOL 315** Quantitative Biology Laboratory
- **BIOL 321** Design and Analysis of Biological Experiments
- **BIOL 339** Aquatic Biology Laboratory
- **BIOL 344** Laboratory for Microbiology
- **BIOL 345** Mammal Diversity and Evolution
- **BIOL 351L** Principles of Ecology Laboratory
- **BIOL 352** Ecology and Evolution of Infectious Diseases
- **BIOL 358** Animal Behavior
- **BIOL 363** Experimental Developmental Biology
- **BIOL 373** Introduction to Neurobiology (effective Fall 2014; previously an organismal elective)
- **BIOL 376** Neurobiology Laboratory
- **BIOL 377** Biorobotics Team Research

### Mathematics core courses

- **MATH 125** Math and Calculus Applications for Life, Managerial, and Social Sci I 4
- **or MATH 121** Calculus for Science and Engineering I

- **MATH 126** Math and Calculus Applications for Life, Managerial, and Social Sci II 4
- **or MATH 122** Calculus for Science and Engineering II

### Chemistry core courses

- **CHEM 105** Principles of Chemistry I 3
- **CHEM 106** Principles of Chemistry II 3
- **CHEM 113** Principles of Chemistry Laboratory 2
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<td>Organic Chemistry I</td>
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<tr>
<td>CHEM 224</td>
<td>Introductory Organic Chemistry II</td>
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**Physics core courses**

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<td>or PHYS 122</td>
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**Total Units** 60-67

At least 15 hours of the selected electives and additional laboratory courses must be at the 300 level or higher.

**BA Biology, Suggested Sequence of Courses**

**First Year**

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<tr>
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<td>or Calculus for Science and Engineering I (MATH 121)</td>
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<td>Principles of Chemistry I (CHEM 105)</td>
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<td>Cells and Proteins (BIOL 215)</td>
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**Second Year**

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<td>GER Course</td>
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<td>Development and Physiology (BIOL 216)</td>
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<td>Genetics (BIOL 326) (or BIOL Elective)</td>
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<td>GER Course</td>
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**Third Year**

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<td>or General Physics I - Mechanics (PHYS 121)</td>
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<td>Open Elective</td>
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<td>or BIOL Elective</td>
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**Fourth Year**

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</table>

**Teacher Licensure**

Students may become eligible for teacher licensure in the field of Life Sciences (Adolescents and Young Adults) by completing content area requirements as well as 34 semester hours in education courses (including student teaching) offered through CWRU. For more details, please contact James Bader (james.bader@case.edu), executive director of the Gelfand STEM Center.

**Subject Area Requirements**

**Biology core courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>BIOL 214</td>
<td>Genes, Evolution and Ecology</td>
<td>3</td>
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<tr>
<td>BIOL 214L</td>
<td>Genes, Evolution and Ecology Lab</td>
<td>1</td>
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<tr>
<td>BIOL 215</td>
<td>Cells and Proteins</td>
<td>3</td>
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<tr>
<td>BIOL 215L</td>
<td>Cells and Proteins Laboratory</td>
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<td>BIOL 216</td>
<td>Development and Physiology</td>
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<td>BIOL 216L</td>
<td>Development and Physiology Lab</td>
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<tr>
<td>BIOL 223</td>
<td>Vertebrate Biology</td>
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**Mathematics core courses**

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<tr>
<td>MATH 125</td>
<td>Math and Calculus Applications for Life, Managerial, and Social Sci I</td>
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<td>MATH 126</td>
<td>Math and Calculus Applications for Life, Managerial, and Social Sci II</td>
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### Chemistry core courses

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<td>Principles of Chemistry I</td>
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<tr>
<td>CHEM 106</td>
<td>Principles of Chemistry II</td>
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<td>CHEM 113</td>
<td>Principles of Chemistry Laboratory</td>
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<tr>
<td>CHEM 223</td>
<td>Introductory Organic Chemistry I</td>
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<td>CHEM 224</td>
<td>Introductory Organic Chemistry II</td>
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<tr>
<td>PHYS 115</td>
<td>Introductory Physics I</td>
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<tr>
<td>PHYS 116</td>
<td>Introductory Physics II</td>
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### One of the following earth, environmental, and planetary sciences (EEPS) courses

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<tr>
<td>EEPS 101</td>
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<tr>
<td>EEPS 110</td>
<td>Physical Geology</td>
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<td>EEPS 115</td>
<td>Introduction to Oceanography</td>
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<td>EEPS 117</td>
<td>Weather and Climate</td>
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### One of the following genetics, cell and molecular biology, or microbiology courses

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>BIOL 308</td>
<td>Molecular Biology</td>
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<tr>
<td>BIOL 326</td>
<td>Genetics</td>
<td></td>
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<tr>
<td>BIOL 343</td>
<td>Microbiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 362</td>
<td>Principles of Developmental Biology</td>
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### One of the following genetics, cell and molecular biology, or microbiology courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>BIOL 301</td>
<td>Biotechnology Laboratory: Genes and Genetic Engineering (effective Fall 2014, no longer satisfies the Genetics requirement)</td>
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<tr>
<td>BIOL 304</td>
<td>Dynamics of Biological Systems: A Quantitative Introduction to Biology</td>
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<tr>
<td>BIOL 305</td>
<td>Molecular Biology</td>
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<tr>
<td>BIOL 316</td>
<td>Fundamental Immunology</td>
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<tr>
<td>BIOL 324</td>
<td>Introduction to Stem Cell Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 325</td>
<td>Cell Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 328</td>
<td>Plant Genomics and Proteomics</td>
<td></td>
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<tr>
<td>BIOL 334</td>
<td>Structural Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 342</td>
<td>Parasitology</td>
<td></td>
</tr>
<tr>
<td>BIOL 343</td>
<td>Microbiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 344</td>
<td>Laboratory for Microbiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 346</td>
<td>Human Anatomy</td>
<td></td>
</tr>
<tr>
<td>BIOL 365</td>
<td>Evo-Dev: Evolution of Body Plans</td>
<td></td>
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<tr>
<td>BIOL 368</td>
<td>Topics in Evolutionary Biology</td>
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</tr>
<tr>
<td>BIOL 369</td>
<td>Neurobiology of Behavior</td>
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<tr>
<td>BIOL 385</td>
<td>Seminar on Biological Processes in Learning and Cognition</td>
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</tr>
<tr>
<td>BIOL 214</td>
<td>Genes, Evolution and Ecology</td>
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<td>BIOL 214L</td>
<td>Genes, Evolution and Ecology Lab</td>
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<td>BIOL 215</td>
<td>Cells and Proteins</td>
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<td>BIOL 215L</td>
<td>Cells and Proteins Laboratory</td>
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<td>BIOL 216</td>
<td>Development and Physiology</td>
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<td>BIOL 216L</td>
<td>Development and Physiology Lab</td>
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### Bachelor of Science in Biology

The Biology BS degree program is intended to prepare students for work as traditional bench or field research scientists. In addition to a general background in biology (the same as provided by the Biology BA program), the Biology BS program requires two semesters of undergraduate research, plus additional courses in quantitative methods (computer programming, statistics, data analysis) and physical chemistry. The research may be done at the university or at any of its affiliated institutions, but the biology department does not formally place students into laboratories. Because of the extra course work and research requirements, the Biology BS program may present scheduling challenges to students who wish to pursue multiple majors, a junior year abroad or internship, or significant extracurricular activities. Early, careful planning in consultation with the major advisor is essential to stay on schedule.

### Biology core courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>BIOL 214</td>
<td>Genes, Evolution and Ecology</td>
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<td>BIOL 214L</td>
<td>Genes, Evolution and Ecology Lab</td>
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</tr>
<tr>
<td>BIOL 215</td>
<td>Cells and Proteins</td>
<td>3</td>
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<tr>
<td>BIOL 215L</td>
<td>Cells and Proteins Laboratory</td>
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<td>BIOL 216</td>
<td>Development and Physiology</td>
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<td>BIOL 216L</td>
<td>Development and Physiology Lab</td>
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### One genetics course

<table>
<thead>
<tr>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>BIOL 326</td>
<td>Genetics</td>
<td>3</td>
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### One course from any two of the following three subject areas (breadth requirement)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>BIOL 301</td>
<td>Biotechnology Laboratory: Genes and Genetic Engineering (effective Fall 2014, no longer satisfies the Genetics requirement)</td>
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<tr>
<td>BIOL 305</td>
<td>Molecular Biology</td>
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<tr>
<td>BIOL 316</td>
<td>Fundamental Immunology</td>
<td></td>
</tr>
<tr>
<td>BIOL 324</td>
<td>Introduction to Stem Cell Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 325</td>
<td>Cell Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 328</td>
<td>Plant Genomics and Proteomics</td>
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<tr>
<td>BIOL 334</td>
<td>Structural Biology</td>
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<tr>
<td>BIOL 342</td>
<td>Parasitology</td>
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<tr>
<td>BIOL 343</td>
<td>Microbiology</td>
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<td>BIOL 344</td>
<td>Laboratory for Microbiology</td>
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<tr>
<td>BIOL 346</td>
<td>Human Anatomy</td>
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<tr>
<td>BIOL 365</td>
<td>Evo-Dev: Evolution of Body Plans</td>
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<tr>
<td>BIOL 368</td>
<td>Topics in Evolutionary Biology</td>
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<tr>
<td>BIOL 369</td>
<td>Neurobiology of Behavior</td>
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<tr>
<td>BIOL 385</td>
<td>Seminar on Biological Processes in Learning and Cognition</td>
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### One quantitative biology laboratory course

<table>
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<tr>
<td>BIOL 300</td>
<td>Dynamics of Biological Systems: A Quantitative Introduction to Biology</td>
<td>3</td>
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<tr>
<td>BIOL 304</td>
<td>Fitting Models to Data: Maximum Likelihood Methods and Model Selection</td>
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### BS Biology, Suggested Sequence of Courses

#### First Year

<table>
<thead>
<tr>
<th>Units</th>
<th>Fall</th>
<th>Spring</th>
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<tbody>
<tr>
<td>Genes, Evolution and Ecology (BIOL 214)</td>
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<tr>
<td>Math and Calculus Applications for Life, Managerial, and Social Sci I (MATH 125)</td>
<td>4</td>
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<tr>
<td>or Calculus for Science and Engineering I (MATH 121)</td>
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<tr>
<td>Principles of Chemistry I (CHEM 105)</td>
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<td>SAGES First Seminar</td>
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<td>Cells and Proteins (BIOL 215)</td>
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<td>Cells and Proteins Laboratory (BIOL 215L)</td>
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<tr>
<td>Math and Calculus Applications for Life, Managerial, and Social Sci II (MATH 126)</td>
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<tr>
<td>or Calculus for Science and Engineering II (MATH 122)</td>
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<tr>
<td>Principles of Chemistry II (CHEM 106)</td>
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<td>Principles of Chemistry Laboratory (CHEM 113)</td>
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<tr>
<td>SAGES University Seminar</td>
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#### Second Year

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<tr>
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<th>Fall</th>
<th>Spring</th>
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<tbody>
<tr>
<td>Development and Physiology (BIOL 216)</td>
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<tr>
<td>Introductory Organic Chemistry I (CHEM 223)</td>
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<td>SAGES University Seminar</td>
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<td>GER Course</td>
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<td>Genetics (BIOL 312)</td>
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<tr>
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<tr>
<td>Elementary Computer Programming (ENGR 131)</td>
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#### Third Year

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<td>BIOL Elective</td>
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<tr>
<td>BIOL Elective</td>
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</table>
### Bachelor of Science in Systems Biology

Systems biology is a rapidly emerging area of research activity at the interface of mathematics, computer science, and the biological sciences. Many modern areas of biology research (e.g., biochemical, neural, behavioral, and ecosystem networks) require the mastery of advanced quantitative and computational skills. The Systems Biology BS degree program is intended to provide the quantitative and multidisciplinary understanding that is necessary for work in these areas. This skill set is different from that produced by traditional undergraduate programs in biology. Consequently, the Systems Biology BS program includes a specialized four-course core curriculum (different from the three-course core used in the Biology BA and BS programs), as well as foundation courses from computer science and advanced mathematics. Undergraduate research is recommended as BIOL 388S Undergraduate Research - SAGES Capstone and BIOL 390 Advanced Undergraduate Research), but is not required.

Note: The Systems Biology BS curriculum is undergoing revision during the 2015-16 academic year. Some courses listed below will not be offered, but substitutes will be available during the transition. For the latest information, please contact Katie Bingman (kathryn.bingman@case.edu), undergraduate coordinator for the Department of Biology.

<table>
<thead>
<tr>
<th>Year</th>
<th>Units</th>
<th>Fall</th>
<th>Spring</th>
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<tbody>
<tr>
<td>First Year</td>
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<tr>
<td>GER Course</td>
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<tr>
<td>BIOL Elective</td>
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<tr>
<td>Quantitative BIOL Laboratory</td>
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<tr>
<td>or other BIOL Laboratory</td>
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<tr>
<td>Introductory Physics I (PHYS 115) or General Physics I - Mechanics (PHYS 121)</td>
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<td>GER Course</td>
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<th>Spring</th>
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<tbody>
<tr>
<td>Undergraduate Research - SAGES Capstone (BIOL 388S) (SAGES Capstone)</td>
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<tr>
<td>Introductory Physical Chemistry I (CHEM 301)</td>
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<td>Advanced Undergraduate Research (BIOL 390)</td>
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<td>BIOL Elective (if needed)</td>
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<td>15-17</td>
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</table>

| Total Units in Sequence: | 121-125 |

### Systems Biology core courses
- **BIOL 250** Introduction to Cell and Molecular Biology Systems 3
- **BIOL 251** Introduction to Organismal and Population Systems 3
- **BIOL 300** Dynamics of Biological Systems: A Quantitative Introduction to Biology 3
- **BIOL 306** Dynamics of Biological Systems II: Tools for Mathematical Biology 3

Approved subspecialty sequence (choose one of the following four sequences) 6
- Neuroscience (any two BIOL courses)
  - **BIOL 373** Introduction to Neurobiology
  - **BIOL 374** Neurobiology of Behavior
  - **BIOL 376** Neurobiology Laboratory
  - **BIOL 378** Computational Neuroscience
  - **BIOL 390** Advanced Undergraduate Research
  - **BIOL 308** Molecular Biology
  - **BIOL 326** Genetics
  - **BIOL 328** Plant Genomics and Proteomics
  - **EECS 359** Bioinformatics in Practice
  - **EECS 458** Introduction to Bioinformatics
  - **EECS 459** Bioinformatics for Systems Biology

Bioinformatics and genetics (any two courses; genetics must be BIOL, but bioinformatics may be any department)
- **BIOL 301** Biotechnology Laboratory: Genes and Genetic Engineering
- **BIOL 308** Molecular Biology
- **BIOL 326** Genetics
- **BIOL 328** Plant Genomics and Proteomics
- **EECS 359** Bioinformatics in Practice
- **EECS 458** Introduction to Bioinformatics
- **EECS 459** Bioinformatics for Systems Biology
- **SYBB 459** Bioinformatics for Systems Biology

Ecology and evolutionary biology (any two BIOL courses)
- **BIOL 305** Herpetology
- **BIOL 307** Evolutionary Biology of the Invertebrates
- **BIOL 336** Aquatic Biology
- **BIOL 345** Mammal Diversity and Evolution
- **BIOL 351** Principles of Ecology
- **BIOL 358** Animal Behavior
- **BIOL 364** Research Methods in Evolutionary Biology
- **BIOL 368** Topics in Evolutionary Biology

Cellular and molecular biology (any two BIOL courses)
- **BIOL 308** Molecular Biology
- **BIOL 316** Fundamental Immunology
- **BIOL 324** Introduction to Stem Cell Biology
- **BIOL 325** Cell Biology
- **BIOL 334** Structural Biology
- **BIOL 342** Parasitology
- **BIOL 343** Microbiology
- **BIOL 362** Principles of Developmental Biology
- **BIOL 363** Experimental Developmental Biology
- **BIOL 365** Evo-Devo: Evolution of Body Plans

**BIOL Electives (excluding 100-level courses, BIOL 214, BIOL 215, BIOL 216, and BIOL 240) 12**
- Undergraduate research recommended
- **BIOL 388S** Undergraduate Research - SAGES Capstone
- **BIOL 390** and Advanced Undergraduate Research

Mathematics and statistics core courses
MATH 121 Calculus for Science and Engineering I 4  
MATH 122 Calculus for Science and Engineering II 4  
or MATH 124 Calculus II  
MATH 223 Calculus for Science and Engineering III 3  
or MATH 227 Calculus III  
MATH 224 Elementary Differential Equations 3  
or MATH 228 Differential Equations  
STAT 312 Basic Statistics for Engineering and Science 3  

Chemistry core courses  
CHEM 105 Principles of Chemistry I 3  
CHEM 106 Principles of Chemistry II 3  
CHEM 113 Principles of Chemistry Laboratory 2  

Physics core courses  
PHYS 121 General Physics I - Mechanics 4  
or PHYS 123 Physics and Frontiers I - Mechanics  
PHYS 122 General Physics II - Electricity and Magnetism 4  
or PHYS 124 Physics and Frontiers II - Electricity and Magnetism  

Computer science core courses  
EECS 132 Introduction to Programming in Java 3  
EECS 233 Introduction to Data Structures 4  
EECS 302 Discrete Mathematics 3  
or MATH 304 Discrete Mathematics  

Systems Electives (any two of the following) 6  
Largely computer science  
EECS 313 Signal Processing  
EECS 324 Modeling and Simulation of Continuous Dynamical Systems  
EECS 340 Algorithms  
EECS 341 Introduction to Database Systems  
EECS 365 Complex Systems Biology  

Largely mathematical  
EECS 246 Signals and Systems  
BIOL 304 Fitting Models to Data: Maximum Likelihood Methods and Model Selection  
BIOL 319 Applied Probability and Stochastic Processes for Biology  
MATH 201 Introduction to Linear Algebra  
BIOL 378 Computational Neuroscience  
or MATH 378 Computational Neuroscience  
OPRE 411 Optimization Modeling  

Total Units 79  

### Systems Biology - Suggested Sequence of Courses

#### First Year  
<table>
<thead>
<tr>
<th>Units</th>
<th>Fall</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 121 Calculus for Science and Engineering I</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Principles of Chemistry I (CHEM 105)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Principles of Chemistry Laboratory (CHEM 113)</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>SAGES First Seminar</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Open Elective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PHED Physical Education</td>
<td>0</td>
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</tr>
</tbody>
</table>

Introduction to Cell and Molecular Biology Systems (BIOL 250) 3  
Calculus for Science and Engineering II (MATH 122) or Calculus II (MATH 124) 4  
Principles of Chemistry II (CHEM 106) 3  
Introduction to Programming in Java (EECS 132) 3  
SAGES University Seminar 3  
PHED Physical Education 0  

Year Total: 16 16  

#### Second Year  
<table>
<thead>
<tr>
<th>Units</th>
<th>Fall</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction to Organismal and Population Systems (BIOL 251)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>General Physics I - Mechanics (PHYS 121) or Physics and Frontiers I - Mechanics (PHYS 123)</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Calculus for Science and Engineering III (MATH 223) or Calculus III (MATH 227)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>SAGES University Seminar</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>GER Course</td>
<td>3</td>
<td></td>
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<tr>
<td>Dynamics of Biological Systems: A Quantitative Introduction to Biology (BIOL 300)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>General Physics II - Electricity and Magnetism (PHYS 122) or Physics and Frontiers II - Electricity and Magnetism (PHYS 124)</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Elementary Differential Equations (MATH 224) or Differential Equations (MATH 228)</td>
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<tr>
<td>Open Elective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>GER Course</td>
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</tbody>
</table>

Year Total: 16 16  

#### Third Year  
<table>
<thead>
<tr>
<th>Units</th>
<th>Fall</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dynamics of Biological Systems II: Tools for Mathematical Biology (BIOL 306)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Discrete Mathematics (EECS 302) or Discrete Mathematics (MATH 304)</td>
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<tr>
<td>BIOL Elective</td>
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<td></td>
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<tr>
<td>Open Elective</td>
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<td></td>
</tr>
<tr>
<td>GER Course</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Basic Statistics for Engineering and Science (STAT 312)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Introduction to Data Structures (EECS 233)</td>
<td>4</td>
<td></td>
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<tr>
<td>BIOL Elective</td>
<td>3</td>
<td></td>
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<tr>
<td>SAGES Departmental Seminar</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>GER Course</td>
<td>3</td>
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</tr>
</tbody>
</table>

Year Total: 15 16  

#### Fourth Year  
<table>
<thead>
<tr>
<th>Units</th>
<th>Fall</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAGES Capstone</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Undergraduate Research - SAGES Capstone (BIOL 388S) (recommended)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Subspecialty Elective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Systems Elective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Open Electives</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

Year Total: 15 15
BIOL Elective 3
Advanced Undergraduate Research (BIOL 390) (recommended)
Subspecialty Elective 3
Systems Elective 3
BIOL Elective (if needed) or Open Elective 3
Open Elective 3

Year Total: 15

Total Units in Sequence: 125

Concentrations in Areas of the Biological Sciences

Students are encouraged to utilize their elective courses in the biology major to take advantage of concentrations in various specialized areas. These concentrations have been developed between the biology department, the basic science departments of the School of Medicine, and other departments. Currently, concentrations have been developed in the following areas: biotechnology and genetic engineering; computational biology; developmental biology; genetics; cell and molecular biology; neurobiology and animal behavior; population biology, ecology and environmental science. Note: these concentrations are informal; they are not declared, and will not appear on the student's diploma or transcript. Advising

Advising

Biology faculty advisors are assigned to students at the time of major or minor declaration. All biology majors are required to meet with their departmental advisors at least once each semester to discuss their academic program, receive clearance for electronic course registration, and obtain approval for any drops, adds, or withdrawals. Please contact Katie Bingman (kathryn.bingman@case.edu), undergraduate coordinator for the Department of Biology, for information about major or minor declaration.

Departmental Honors

To receive a bachelor's degree “with Honors in Biology” (formally noted on the transcript), the student must meet the following criteria:

1. Maintain a 3.4 overall grade point average, with a 3.6 in BIOL courses
2. Carry out two semesters of independent research (taken as BIOL courses) at Case Western Reserve University
3. Write a senior honors thesis with the approval of the faculty supervisor
4. Submit the thesis for review by an ad hoc honors committee
5. Successfully defend the thesis at an oral examination

Additional information and application forms are available from the biology department office.

Minors

Two tracks are available for the minor, each requiring a total of 16 hours of biology courses. One track consists of any two of the three biology core lectures with their associated laboratories, plus electives:

Any two of the following biology core classes (and associated labs)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 214 &amp; 214L</td>
<td>Genes, Evolution and Ecology</td>
</tr>
<tr>
<td>BIOL 215 &amp; 215L</td>
<td>Cells and Proteins</td>
</tr>
<tr>
<td>BIOL 216 &amp; 216L</td>
<td>Development and Physiology</td>
</tr>
</tbody>
</table>

BIOL electives (excluding 100-level courses, BIOL 240, BIOL 250, BIOL 251, and BIOL 390) 8

Total Units 16

An alternative track, for students using the Systems Biology core, consists of:

Required courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 250</td>
<td>Introduction to Cell and Molecular Biology Systems</td>
</tr>
<tr>
<td>BIOL 251</td>
<td>Introduction to Organismal and Population Systems</td>
</tr>
<tr>
<td>BIOL electives (excluding 100-level courses, BIOL 214, BIOL 215, BIOL 216, BIOL 240, and BIOL 390)</td>
<td>10</td>
</tr>
</tbody>
</table>

Total Units 16

Graduate Programs

Master of Science

The Department of Biology offers both thesis and non-thesis Master of Science degree programs. Both programs require a minimum of 30 semester hours of courses at the 300 level or higher. A minimum of 18 semester hours of formal course work is required for the thesis degree, and a minimum of 24 semester hours of formal course work for the non-thesis degree. The remaining credits may be research credits (BIOL 601 Research and BIOL 651 Thesis M.S.). The Entrepreneurial Biotechnology (EB) is a two-year Plan A professional MS degree in Biology. The program includes four (4) required courses, an internship and electives to make up the 30 semester hours. The thesis is based on a real entrepreneurial project with an existing company or your own startup (the internship).

Plan A (Thesis)

The Plan A Master of Science degree in biology is a thesis graduate degree program. The purpose of the program is to provide advanced exposure to biology for interested professionals, to provide additional training for those wishing to resume or change careers, or to provide additional preparation in biology for students interested in pursuing professional studies in the health sciences. Students are required to write a Master of Science thesis.

Program of Study

All candidates must complete a total of 30 credit hours in course work at the 300 level or higher within 5 years of matriculation into the graduate program. At least 18 of these credit hours must be at the 400 level or above. Further, at least 15 credit hours must be in courses offered by the biology department. The remaining course work may include courses offered by any department within the University, subject to an advisor’s approval and School of Graduate Studies regulations.
Candidates are limited to 3 credit hours of BIOL 601 Research, but may take up to 9 credit hours of BIOL 651 Thesis M.S. According to rules of the School of Graduate Studies, once a candidate registers for BIOL 651, the registration must continue for a minimum of 1 credit per semester until completion of the degree program. Students who are uncertain about completing requirements for a Plan A master’s degree should consult the regulations for the Plan B Master’s degree. These two master’s degrees have different regulations concerning use of BIOL 601. A candidate may wish to use BIOL 599 Advanced Independent Study for Graduate Students; the letter grade assigned will reflect the evaluation by the entire Advisory Committee. The candidate’s program of study must also include a formal oral presentation in a seminar or journal club on a topic different from the candidate’s research topic.

Plan A (Thesis) Entrepreneurial Biotechnology

The Entrepreneurial Biotechnology (EB) students study state-of-the-art biotechnology, practical business, and technology innovation while working on a real-world entrepreneurial project with an existing company or their own startup. The EB helps to connect students with mentors, advisors, partners, funding sources and job opportunities. EB prepares students to work in diverse research or technology-centered environments. The Entrepreneurial Biotechnology Program (EB) requires students to write a thesis in order to graduate with a Master of Science in Biology, Entrepreneurship Track. The thesis must be based on a project of significant time investment on the part of the student and must be grounded in the real world (i.e., not simply an academic exercise). Thus, each student is required to work as an intern, employee, or entrepreneur, typically with a startup, existing company, early-stage investment firm, or affiliate of a research organization. The duration must be at least one year, with one semester reserved for full-time work outside of the classroom (usually the fourth and final semester). Under this requirement, international students will be permitted no more than one semester of full-time curricular practical training (CPT).

Plan B (Non-thesis)

The Plan B Master of Science degree in biology is a non-thesis graduate degree program. The purpose of the program is to provide advanced exposure to biology for interested professionals, to provide additional training for those wishing to resume or change careers, or to provide additional preparation in biology for students interested in pursuing professional studies in the health sciences. Students are not required to write a Master of Science thesis, but the program does require independent study of all degree candidates.

Program of Study

All candidates must complete a total of 30 credit hours in course work at the 300 level or higher. At least 18 of these credit hours must be at the 400 levels or above. Further, at least 15 credit hours must be in courses offered by the Biology Department. At least one course must be taken in each of the following areas of biology: cell and molecular biology (including chemical biology), organismal biology, and population biology. The remaining course work may include courses offered by any department within the University, subject to the advisor’s approval and School of Graduate Studies regulations. Candidates are limited to a total of 6 credit hours of independent study (BIOL 599 Advanced Independent Study for Graduate Students or BIOL 601 Research). Both of these courses require completion of a Course Proposal Form (available in the Biology Departmental Office) and approval by the advisor. In the case of enrollment in BIOL 599, the letter grade assigned will reflect the evaluation by a three person committee recruited by the student and advisor.

Doctor of Philosophy

The degree of Doctor of Philosophy is awarded in recognition of in-depth knowledge in a major field and comprehensive understanding of related subjects together with a demonstration of ability to perform independent investigation and to communicate the results of such investigation in an acceptable dissertation.

Students entering with a bachelor’s degree will satisfactorily complete a minimum of 36 credit hours (which may include independent study/research taken as BIOL 601 Research), tutorials, and seminars. For students entering with an approved master’s degree, completion of at least 18 semester hours of course work is required. A minimum of 18 semester hours of dissertation research (BIOL 701 Dissertation Ph.D.) is required for all doctoral students.

Teaching experience is an integral part of the graduate training. Students are involved in supervised laboratory teaching in selected undergraduate courses taking into account both the specialized areas of interest of the student and his or her broader professional development. The normal teaching requirement consists of four semesters.

Department Faculty

Mark A. Willis, PhD
(University of California, Riverside)
Professor; Chair
Neurobiology and behavior; sensorimotor control of insect flight; animal behavior

Karen C. Abbott, PhD
(University of Chicago)
Associate Professor
Ecology; theoretical biology

Radhika Atit, PhD
(University of Cincinnati)
Associate Professor
Developmental biology and genetics; origin and patterning of skin

Michael F. Benard, PhD
(University of California, Davis)
George B. Mayer Chair in Urban and Environmental Studies; Associate Professor
Ecology; evolutionary biology

Rebecca Benard, PhD
(University of California, Davis)
Instructor
Plant population ecology; physiology

Susan M. Burden-Gulley, PhD
(Case Western Reserve University)
Instructor
Neuroscience; axonal growth; neural development; brain cancer

Jean H. Burns, PhD
(Florida State University)
Assistant Professor
Plant ecology; community assembly; invasibility; the role of phylogeny in assembly; the role of demographic processes in biological invasions
Arnold I. Caplan, PhD  
(Johns Hopkins University)  
Professor; Director, Skeletal Research Center  
Developmental biology and biochemistry; molecular and cellular aspects of muscle, cartilage, and bone development

Leena Chakravarty, PhD  
(Ohio State University)  
Instructor  
Microbial molecular genetics

Hillel J. Chiel, PhD  
(Massachusetts Institute of Technology)  
Professor  
Neurobiology and animal behavior; cellular dynamics of neuronal computation

Christopher A. Cullis, PhD  
(University of East Anglia, United Kingdom)  
Francis Hobart Herrick Professor of Biology  
Plant molecular biology and genetics; modifications of the information content of plant cells

Sarah E. Diamond, PhD  
(University of North Carolina, Chapel Hill)  
Assistant Professor  
Evolutionary ecology; global change biology; invertebrate immunology; multivariate statistics

Richard F. Drushel, PhD  
(Case Western Reserve University)  
Senior Instructor; Executive Officer  
Vertebrate anatomy and physiology; kinematic modeling and neural control; autonomous robotics

Jessica L. Fox, PhD  
(University of Washington)  
Assistant Professor  
Neurobiology of behavior

Stephen E. Haynesworth, PhD  
(Case Western Reserve University)  
Associate Professor; Associate Dean, College of Arts and Sciences  
Developmental and aging biology

Valerie Haywood, PhD  
(University of California, Davis)  
Senior Instructor  
Plant developmental biology; molecular biology

Emmitt R. Jolly, PhD  
(University of California, San Francisco)  
Associate Professor  
Molecular biology and genetics; developmental biology; parasitology; schistosomiasis

Barbara A. Kuehmer, PhD  
(Case Western Reserve University)  
Senior Instructor  
Molecular biology and genetics; developmental neuroscience

Ryan A. Martin, PhD  
(University of North Carolina, Chapel Hill)  
Assistant Professor  
Evolutionary ecology; behavioral ecology; ecology’s role in evolutionary diversification; causes and consequences of phenotypic plasticity

Claudia M. Mizutani, PhD  
(Federal University of Rio de Janeiro, Brazil)  
Associate Professor  
Developmental biology and genetics; embryonic body-axis formation

Ronald G. Oldfield, PhD  
(University of Michigan)  
Instructor  
Evolutionary ecology of cichlid fishes; ichthyology

Roy E. Ritzmann, PhD  
(University of Virginia)  
Professor  
Neurobiology of behavior; insect locomotion and brain studies

Charles E. Rozek, PhD  
(Wayne State University)  
Associate Professor; Vice Provost; Dean of Graduate Studies  
Molecular genetics; developmental biology

Robin Snyder, PhD  
(University of California, Santa Barbara)  
Associate Professor  
Theoretical ecology

Jean F. Welter, MD, PhD  
(Leopold Franzens Universität, Austria; Case Western Reserve University)  
Research Associate Professor  
Tissue engineering and cell-based therapies; bioreactor design; mechanobiology; bone transplantation; imaging; fluorescence spectroscopy; drug delivery

Darin Croft, PhD  
(University of Chicago)  
Associate Professor, Department of Anatomy, School of Medicine  
Vertebrate paleontology and fieldwork; mammals, especially those of South America; paleoecology and ancient ecosystems

Brian M. McDermott, PhD  
(Columbia University)  
Assistant Professor, Department of Otolaryngology, University Hospitals of Cleveland  
Neurobiology; hearing and deafness; zebrafish; mechanotransduction; synapse development

Scott W. Simpson, PhD  
(Kent State University)  
Associate Professor, Department of Anatomy, School of Medicine  
Homind paleontology and fieldwork; hominin dentition; locomotor capacities of early Homo erectus
Peter Thomas, PhD  
(University of Chicago)  
Associate Professor, Department of Mathematics, Applied Mathematics,  
and Statistics  
Synchronization and reliability of neural activity; gradient sensing, signal  
transduction and information theory; pattern formation in the visual  
cortex; malaria informatics

Adjunct Faculty

James Bader, MS  
(Case Western Reserve University)  
Adjunct Lecturer; Executive Director, Gelfand STEM Center  
STEM education; aquatic biology

David J. Burke, PhD  
(Rutgers University)  
Adjunct Assistant Professor, Holden Arboretum  
Rhizosphere ecology; plant-microbe interactions; molecular microbial  
ecology; plant ecology

Pam Dennis, PhD, DVM  
(Ohio State University; College of Veterinary Medicine, North Carolina  
State University)  
Adjunct Assistant Professor; Clinical Assistant Professor, Cleveland  
Metroparks Zoo  
Veterinary wildlife epidemiology in zoo and free-ranging animal  
populations

Nancy Dilullo, PhD  
(Pennsylvania State University College of Medicine)  
Adjunct Instructor; Senior Associate Dean, Undergraduate Studies  
Cell biology; biochemistry

Christopher Kuhar, PhD  
(Georgia Institute of Technology)  
Adjunct Assistant Professor; Executive Director, Cleveland Metroparks  
Zoo  
Conservation and education program evaluation; experimental  
psychology; animal behavior

Ana B. Locci, PhD  
(Case Western Reserve University)  
Adjunct Assistant Professor; Director, University Farm  
Aquatic ecology and population biology

Kristen E. Lukas, PhD  
(Georgia Institute of Technology)  
Adjunct Assistant Professor; Curator, Conservation and Science,  
Cleveland Metroparks Zoo  
Applied animal behavior; behavior and health; visitor attitudes and  
behavior

Audrey Lynn, PhD  
(Case Western Reserve University)  
Adjunct Instructor  
Human genetics; chromosome behavior during meiosis; mitochondrial  
disorders

Mandi M. Shook, PhD  
(University of Kentucky)  
Adjunct Assistant Professor; Associate Research Curator, Cleveland  
Metroparks Zoo  
Endocrinology and reproductive physiology

Gavin J. Svenson, PhD  
(Brigham Young University)  
Adjunct Assistant Professor; Curator/Head, Department of Invertebrate  
Zoology, Cleveland Museum of Natural History  
Phylogenetics and systematics

Peter A. Zimmerman, PhD  
(Case Western Reserve University)  
Professor, Center for Global Health and Diseases, School of Medicine  
Infectious diseases; genetics; genomic epidemiology and evolution

Lecturers

Deborah L. Harris, MS  
(Wright State University)  
Full-time Lecturer  
Aquatic biofouling; mycology

Dianne M. Kube, PhD  
(University of North Dakota School of Medicine)  
Full-time Lecturer  
Cell biology, cystic fibrosis

Emeritus Faculty

Robert P. Davis, PhD  
(Cornell University)  
Associate Professor of Biology Emeritus; Dean of Collegiate Affairs  
Emeritus  
Developmental biology

Morris Burke, PhD  
(University of New South Wales, Australia)  
Professor Emeritus  
Muscle physiology; protein chemistry

Joseph F. Koonce, PhD  
(University of Wisconsin, Madison)  
Professor Emeritus  
Aquatic ecology; systems ecology

Martin J. Rosenberg, PhD  
(State University of New York, Stony Brook)  
Senior Instructor Emeritus  
Herpetology; vertebrate biology; human anatomy and physiology

Norman B. Rushforth, PhD  
(Cornell University)  
Professor Emeritus  
Epidemiology; animal behavior; population biology

Joanne Westin, PhD  
(Cornell University)  
Senior Instructor Emerita  
Neurobiology and behavior; physiology
Courses

BIOL 114. Principles of Biology. 3 Units.
A one-semester course in biology designed for the non-major. A primary objective of this course is to demonstrate how biological principles impact an individual's daily life. BIOL 114 introduces students to the molecules of life, cell structure and function, respiration and photosynthesis, molecular genetics, heredity and human genetics, evolution, diversity of life, and ecology. Minimal background is required; however, some exposure to biology and chemistry at the high school level is helpful. This course is not open to students with credit for BIOL 214 or BIOL 250. This course does not count toward any Biology degree.

BIOL 116. Introduction to Human Anatomy and Physiology I. 3 Units.
This is the first course in a two-semester sequence that covers human anatomy and physiology for the non-major. BIOL 116 covers homeostasis, cell structure and function, membrane transport, tissue types and the integumentary, skeletal, muscular and nervous systems. This course is not open to students with credit for BIOL 216, BIOL 251, BIOL 340, or BIOL 346. This course does not count toward any Biology degree. Prereq or Coreq: BIOL 114.

BIOL 117. Introduction to Human Anatomy and Physiology II. 3 Units.
This is the second course in a two-semester sequence that covers human anatomy and physiology for the non-major. BIOL 117 covers the endocrine, circulatory, respiratory, digestive, lymphatic, urinary systems including acid-base regulation, and reproductive systems. This course is not open to students with credit for BIOL 216, BIOL 251, BIOL 340, or BIOL 346. This course does not count toward any Biology degree. Prereq: BIOL 114 and BIOL 116.

BIOL 214. Genes, Evolution and Ecology. 3 Units.
First in a series of three required courses of the Biology major. Topics include: biological molecules (focus on DNA and RNA); mitotic and meiotic cell cycles; gene expression; genetics; population genetics; evolution; biological diversity and ecology. Prereq or Coreq: CHEM 105 or CHEM 111.

BIOL 214L. Genes, Evolution and Ecology Lab. 1 Unit.
First in a series of three laboratory courses required of the Biology major. Topics include: biological molecules (with a focus on DNA and RNA); basics of cell structure (with a focus on malaria research); molecular genetics; biotechnology; population genetics and evolution; ecology. Assignments will be in the form of a scientific journal submission. Prereq or Coreq: BIOL 214.

BIOL 215. Cells and Proteins. 3 Units.
Second in a series of three courses required of the Biology major. Topics include: biological molecules (focus on proteins, carbohydrates, and lipids); cell structure (focus on membranes, energy conversion organelles and cytoskeleton); protein structure-function; enzyme kinetics; cellular energetics, and cell communication and motility strategies. Prereq: BIOL 214 and (CHEM 105 or CHEM 111). Prereq or Coreq: CHEM 106 or ENGR 145.

BIOL 215L. Cells and Proteins Laboratory. 1 Unit.
Second in a series of three laboratory courses required of the Biology major. Topics to include: protein structure-function, enzymes kinetics; cell structure; cellular energetics, respiration and photosynthesis. In addition, membrane structure and transport will be covered. Laboratory and discussion sessions offered in alternate weeks. This course is not available for students who have taken BIOL 215 as a 4-credit course. Prereq: BIOL 214L and Prereq or Coreq: BIOL 215.

BIOL 216. Development and Physiology. 3 Units.
This is the final class in the series of three courses required of the Biology major. As with the two previous courses, BIOL 214 and 215, this course is designed to provide an overview of fundamental biological processes. It will examine the complexity of interactions controlling reproduction, development and physiological function in animals. The Developmental Biology section will review topics such as gametogenesis, fertilization, cleavage, gastrulation, the genetic control of development, stem cells and cloning. Main topics included in the Physiology portion consist of: homeostasis, the function of neurons and nervous systems; the major organ systems and processes involved in circulation, excretion, osmoregulation, gas exchange, feeding, digestion, temperature regulation, endocrine function and the immunologic response. There are two instructional modes for this course: lecture mode and hybrid mode. In the lecture mode students attend class for their instruction. In the hybrid mode students watch online lectures from the course instructor and attend one discussion session with the course instructor each week. The online content prepares students for the discussion. Which mode is offered varies depending on the term. Students are made aware of what mode is offered at the time of registration. The total student effort and course content is identical for both instructional modes. Either instructional mode fulfills the BIOL 216 requirement for the BA and BS in Biology. Prereq: BIOL 214.

BIOL 216L. Development and Physiology Lab. 1 Unit.
Third in a series of three laboratory courses required of the Biology major. Students will conduct laboratory experiments designed to provide hands-on, empirical laboratory experience in order to better understand the complex interactions governing the basic physiology and development of organisms. Laboratories and discussion sessions offered in alternate weeks. Prereq: BIOL 214L. Prereq or Coreq: BIOL 216.

BIOL 223. Vertebrate Biology. 3 Units.
A survey of vertebrates from jawless fishes to mammals. Functional morphology, physiology, behavior and ecology as they relate to the groups’ relationships with their environment. Evolution of organ systems. Two lectures and one laboratory per week. The laboratory will involve a study of the detailed anatomy of the shark and cat used as representative vertebrates. Students are expected to spend at least three hours of unscheduled laboratory each week. This course fulfills a laboratory requirement for the biology major.

BIOL 225. Evolution. 3 Units.
Multidisciplinary study of the course and processes of organic evolution provides a broad understanding of the evolution of structural and functional diversity, the relationships among organisms and their environments, and the phylogenetic relationships among major groups of organisms. Topics include the genetic basis of micro- and macro-evolutionary change, the concept of adaptation, natural selection, population dynamics, theories of species formation, principles of phylogenetic inference, biogeography, evolutionary rates, evolutionary convergence, homology, Darwinian medicine, and conceptual and philosophic issues in evolutionary theory. Offered as ANTH 225, BIOL 225, EEPS 225, HSTY 225, and PHIL 225.
Biol 240. Personalized Medicine. 3 Units.
The emphasis of clinical practice is slowly shifting from one-disease and one-treatment-fits-all to more personalized care based on molecular markers of disease risk, disease subtype, drug effectiveness, and adverse drug reactions. This course, designed for non-biology majors, will introduce how the developments in gene sequencing, genetic markers, and stem cells can be applied for predictive testing and personalized therapies. Core concepts to be covered include the principles of genetics including the inheritance of traits determined by single genes and by multiple genes, the assignment of risk to particular genetic constitutions, and the nature and use of stem cells. The emergence of private companies as resources for the performance of the tests, and how the general public will be able to interpret their own data (with or without the access to genetic counselors), will also be covered. The course will include hands-on laboratory experiences of DNA manipulation and detection using the polymerase chain reaction and gel electrophoresis. The ethical, legal, and social issues associated with personal genetic testing will also be covered. This course does not count towards any Biology degree, nor towards the Biology minor.

Biol 250. Introduction to Cell and Molecular Biology Systems. 3 Units.
This course will emphasize an understanding of living organisms at the cellular level from a molecular view point. Topics to be covered will include: unity and diversity of living things, evolutionary relatedness, cells, tissues and organelles, life as a biochemical process, molecular building blocks of life, gene structure and function, uses of model organisms and molecular experimental methods. The topics to be covered are relevant to current practices in biotechnology, medicine and agriculture and these connections will be highlighted. This course is not open to students who have received credit for Biol 214 and/or Biol 215.

Biol 251. Introduction to Organismal and Population Systems. 3 Units.
This course will emphasize an understanding of the regulation of the structure and function of organismal and population systems. Adopting an evolutionary perspective, the course will provide students with a comparative analysis of plant and animal solutions to the problem of multicellularity. Detailed exploration of animals will focus on the development of tissue and organ systems and their coordination at an organismal level. This systems approach will then be extended to regulation of ecosystems and abundance of organisms in populations.

Biol 300. Dynamics of Biological Systems: A Quantitative Introduction to Biology. 3 Units.
This course will introduce students to dynamic biological phenomena, from the molecular to the population level, and models of these dynamical phenomena. It will describe a biological system, discuss how to model its dynamics, and experimentally evaluate the resulting models. Topics will include molecular dynamics of biological molecules, kinetics of cell metabolism and the cell cycle, biophysics of excitability, scaling laws for biological systems, biomechanics, and population dynamics. Mathematical tools for the analysis of dynamic biological processes will also be presented. Students will manipulate and analyze simulations of biological processes, and learn to formulate and analyze their own models. This course satisfies a laboratory requirement for the biology major. Offered as Biol 300 and Ebme 300.

Biol 301. Biotechnology Laboratory: Genes and Genetic Engineering. 3 Units.
Laboratory training in recombinant DNA techniques. Basic microbiology, growth, and manipulation of bacteriophage, bacteria and yeast. Students isolate and characterize DNA, construct recombinant DNA molecules, and reintroduce them into eukaryotic cells (yeast, plant, animal) to assess their viability and function. Two laboratories per week. Offered as Biol 301 and Biol 401. Prereq: Biol 215 or Biol 250.

Biol 302. Human Learning and the Brain. 3 Units.
This course focuses on the question, “How does the human brain learn?” Through assigned readings, extensive class discussions, and a major paper, each student will explore personal perspectives on learning. Specific topics include, but are not limited to: the brain's cycle of learning; neocortex structure and function; emotion and limbic brain; synapse dynamics and changes in learning; images in cognition; symbolic brain (language, mathematics, music); memory formation; and creative thought and brain mechanisms. The major paper will be added to each student’s SAGES writing portfolio. In addition, near the end of the semester, each student will make an oral presentation on a chosen topic. Offered as Biol 302 and COGS 322. Counts as SAGES Departmental Seminar.

Biol 304. Fitting Models to Data: Maximum Likelihood Methods and Model Selection. 3 Units.
This course will introduce students to maximum likelihood methods for fitting models to data and to ways of deciding which model is best supported by the data (model selection). Along the way, students will learn some basic tenets of probability and develop competency in R, a commonly used statistical package. Examples will be drawn from ecology, epidemiology, and potentially other areas of biology. The second half of the course is devoted to in-class projects, and students are encouraged to bring their own data. Offered as Biol 304 and Biol 404. Prereq: Math 121 and Math 122 OR Math 125 and Math 126.

Biol 305. Herpetology. 4 Units.
Amphibians and reptiles exhibit tremendous diversity in development, physiology, anatomy, behavior and ecology. As a result, amphibians and reptiles have served as model organisms for research in many different fields of biology. This course will cover many aspects of amphibian and reptile biology, including anatomy, evolution, geographical distribution, physiological adaptations to their environment, reproductive strategies, moisture-, temperature-, and food-relations, sensory mechanisms, predator-prey relationships, communication (vocal, chemical, behavioral), population biology, and the effects of venomous snake bite. Laboratory sessions will be devoted to learning species identification and evolutionary relationships, discussion of the ecology of Ohio’s amphibians and reptiles, survey techniques for determining population size and structure, and observations of the behavior of live reptiles and amphibians. Laboratory sessions may include trips to Squire Valleyeue Farm, Cleveland Museum of Natural History, and Cleveland Metroparks Zoo. Prereq: Biol 214 or Biol 251.

Biol 306. Dynamics of Biological Systems II: Tools for Mathematical Biology. 3 Units.
Building on the material in Biology 300, this course focuses on the mathematical tools used to construct and analyze biological models, with examples drawn largely from ecology but also from epidemiology, developmental biology, and other areas. Analytic "paper and pencil" techniques are emphasized, but we will also use computers to help develop intuition. By the end of the course, students should be able to recognize basic building blocks in biological models, be able to perform simple analysis, and be more fluent in translating between verbal and mathematical descriptions. Offered as Biol 306 and Math 376. Prereq: Biol 300 or Math 224 or Math 228.
BIOL 307. Evolutionary Biology of the Invertebrates. 3 Units.
Important events in the evolution of invertebrate life, as well as structure, function, and phylogeny of major invertebrate groups.

BIOL 308. Molecular Biology. 4 Units.
An examination of the flow of genetic information from DNA to RNA to protein. Topics include: nucleic acid structure; mechanisms and control of DNA, RNA, and protein biosynthesis; recombinant DNA; and mRNA processing and modification. Where possible, eukaryotic and prokaryotic systems are compared. Special topics include yeast as a model organism, molecular biology of cancer, and molecular biology of the cell cycle. Current literature is discussed briefly as an introduction to techniques of genetic engineering. Recommended preparation: BIOL 307. Offered as BIOL 308, BIOL 308, BIOL 408, and BIOL 408. Prereq: BIOL 215 or BIOL 307.

BIOL 310. Field Studies in Evolutionary Ecology. 3 Units.
The field of Evolutionary Ecology examines how the interactions between organisms and their environments evolve. In this field-based course, students will conduct a variety of experimental and observational field studies aimed at addressing key concepts in Evolutionary Ecology. Students will gain experience in study design and data collection in natural populations, data analysis, and the writing and presentation of scientific results. This course satisfies a laboratory requirement of a B.A. in Biology. This course satisfies an additional laboratory requirement of a B.S. in Biology. Prereq: BIOL 214.

BIOL 311A. Survey of Bioinformatics: Technologies in Bioinformatics. 1 Unit.
SYBB 311/411A is a 5-week course that introduces students to the high-throughput technologies used to collect data for bioinformatics research in the fields of genomics, proteomics, and metabolomics. In particular, we will focus on mass spectrometer-based proteomics, DNA and RNA sequencing, genotyping, protein microarrays, and mass spectrometry-based metabolomics. This is a lecture-based course that relies heavily on out-of-class readings. Graduate students will be expected to write a report and give an oral presentation at the end of the course. SYBB 311/411A is part of the SYBB survey series which is composed of the following course sequence: (1) Technologies in Bioinformatics, (2) Data Integration in Bioinformatics, (3) Translational Bioinformatics, and (4) Programming for Bioinformatics. Each standalone section of this course series introduces students to an aspect of a bioinformatics project - from data collection (SYBB 311/411A), to data integration (SYBB 311/411B), to research applications (SYBB 311/411C), with a fourth module (SYBB 311/411D) introducing basic programming. Graduate students have the option of enrolling in all four courses or choosing the individual modules most relevant to their background and goals with the exception of SYBB411D, which must be taken with SYBB411A. Offered as SYBB 311A, BIOL 311A and SYBB 411A. Prereq: (BIOL 214 and BIOL 215) or BIOL 250. Coreq: BIOL 311B, BIOL 311C, and BIOL 311D.

BIOL 311B. Survey of Bioinformatics: Data Integration in Bioinformatics. 1 Unit.
SYBB 311/411B is a five week course that surveys the conceptual models and tools used to analyze and interpret data collected by high-throughput technologies, providing an entry points for students new to the field of bioinformatics. The knowledge structures that we will cover include: biomedical ontologies, signaling pathways, and interaction networks. We will also cover tools for genome exploration and analysis. The SYBB survey series is composed of the following course sequence: (1) Technologies in Bioinformatics, (2) Data Integration in Bioinformatics, (3) Translational Bioinformatics, and (4) Programming for Bioinformatics. Each standalone section of this course series introduces students to an aspect of a bioinformatics project - from data collection (SYBB 311/411A), to data integration (SYBB 311/411B), to research applications (SYBB 311/411C), with a fourth module (SYBB 311/411D) introducing basic programming. Graduate students have the option of enrolling in all four courses or choosing the individual modules most relevant to their background and goals with the exception of SYBB411D, which must be taken with SYBB411A. Offered as SYBB 311, BIOL 311B, and SYBB 411B. Prereq: (BIOL 214 and BIOL 215) or BIOL 250. Coreq: BIOL 311A, BIOL 311C, and BIOL 311D.

BIOL 311C. Survey of Bioinformatics: Translational Bioinformatics. 1 Unit.
SYBB 311/411C is a longitudinal course that introduces students to the latest applications of bioinformatics, with a focus on translational research. Topics include: ‘omic drug discovery, pharmacogenomics, microbiome analysis, and genomic medicine. The focus of this course is on illustrating how bioinformatic technologies can be paired with data integration tools for various applications in medicine. The course is organized as a weekly journal club, with instructors leading the discussion of recent literature in the field of bioinformatics. Students will be expected to complete readings beforehand; students will also work in teams to write weekly reports reviewing journal articles in the field. The SYBB survey series is composed of the following course sequence: (1) Technologies in Bioinformatics, (2) Data Integration in Bioinformatics, (3) Translational Bioinformatics, and (4) Programming for Bioinformatics. Each standalone section of this course series introduces students to an aspect of a bioinformatics project - from data collection (SYBB 311/411A), to data integration (SYBB 311/411B), to research applications (SYBB 311/411C), with a fourth module (SYBB 311/411D) introducing basic programming. Graduate students have the option of enrolling in all four courses or choosing the individual modules most relevant to their background and goals with the exception of SYBB411D, which must be taken with SYBB411A. Offered as SYBB 311C, BIOL 311C and SYBB 411C. Prereq: (BIOL 214 and BIOL 215) or BIOL 250. Coreq: BIOL 311A, BIOL 311B, and BIOL 311D.
BIOL 311D. Survey of Bioinformatics: Programming for Bioinformatics. 1 Unit.
SYBB 311D/411D is a 1-credit, 5-week long course that will introduce students to bioinformatics software and programming in the R language; this course is designed for those with little or no prior programming experience. Students will gain hands-on experience working with R packages and functions designed for bioinformatics applications. Programming for Bioinformatics short course focuses on a platform, in this case R-project (project.org), and introduces students to basic programming in R, what packages are available for their use, and teaches an introductory hands-on experience working with R by walking through the students in analyzing a large-omics dataset. At the end of the class, the students are assessed with a small-scale project, where they analyze a publicly available dataset and produce a short report. The SYBB survey series is composed of the following course sequence: (1) Technologies in Bioinformatics, (2) Data Integration in Bioinformatics, (3) Translational Bioinformatics, and (4) Programming for Bioinformatics. Each standalone section of this course series introduces students to an aspect of a bioinformatics project - from data collection (SYBB 311/411A), to data integration (SYBB 311/411B), to research applications (SYBB 311/411C), with a fourth module (SYBB 311/411D) introducing basic programming. Graduate students have the option of enrolling in all four courses or choosing the individual modules most relevant to their background and goals with the exception of SYBB411D, which must be taken with SYBB411A. Offered as SYBB 311D, BIOL 311D and SYBB 411D. Prereq: BIOL 214 and BIOL 215 or BIOL 250. Coreq: BIOL 311A, BIOL 311B, and BIOL 311C.

BIOL 315. Quantitative Biology Laboratory. 3 Units.
This course will apply a range of quantitative techniques to explore structure-function relations in biological systems. Using a case study approach, students will explore causes of impairments of normal function, will assemble diverse sets of information into a database format for the analysis of causes of impairment, will analyze the data with appropriate statistical and other quantitative tools, and be able to communicate their results to both technical and non-technical audiences. The course has one lecture and one lab per week. Students will be required to maintain a journal of course activities and demonstrate mastery of quantitative tools and statistical techniques. Graduate students will have a final project that applies these techniques to a problem of their choice. Offered as BIOL 315 and BIOL 415. Prereq: BIOL 214 or BIOL 251.

BIOL 316. Fundamental Immunology. 4 Units.
Introductory immunology providing an overview of the immune system, including activation, effector mechanisms, and regulation. Topics include antigen-antibody reactions, immunologically important cell surface receptors, cell-cell interactions, cell-mediated immunity, innate versus adaptive immunity, cytokines, and basic molecular biology and signal transduction in B and T lymphocytes, and immunopathology. Three weekly lectures emphasize experimental findings leading to the concepts of modern immunology. An additional recitation hour is required to integrate the core material with experimental data and known immune mediated diseases. Five mandatory 90 minute group problem sets per semester will be administered outside of lecture and recitation meeting times. Graduate students will be graded separately from undergraduates, and 22 percent of the grade will be based on a critical analysis of a recently published, landmark scientific article. Offered as BIOL 316, BIOL 416, CLBY 416, PATH 316 and PATH 416. Prereq: BIOL 215 and 215L.

BIOL 318. Introductory Entomology. 4 Units.
The goal of this course is to discover that, for the most part, insects are not aliens from another planet. Class meetings will alternate; with some structured as lectures, while others are laboratory exercises. Sometimes we will meet at the Cleveland Museum of Natural History, or in the field to collect and observe insects. The 50 minute discussion meeting once a week will serve to address questions from both lectures and lab exercises. The students will be required to make a small but comprehensive insect collection. Early in the semester we will focus on collecting the insects, and later, when insects are gone for the winter, we will work to identify the specimens collected earlier. Students will be graded based on exams, class participation and their insect collections. Offered as BIOL 318 and BIOL 418. Prereq: BIOL 214 and BIOL 215 and BIOL 216 or BIOL 250 and BIOL 251.

BIOL 319. Applied Probability and Stochastic Processes for Biology. 3 Units.
Applications of probability and stochastic processes to biological systems. Mathematical topics will include: introduction to discrete and continuous probability spaces (including numerical generation of pseudo random samples from specified probability distributions), Markov processes in discrete and continuous time with discrete and continuous sample spaces, point processes including homogeneous and inhomogeneous Poisson processes and Markov chains on graphs, and diffusion processes including Brownian motion and the Ornstein-Uhlenbeck process. Biological topics will be determined by the interests of the students and the instructor. Likely topics include: stochastic ion channels, molecular motors and stochastic ratchets, actin and tubulin polymerization, random walk models for neural spike trains, bacterial chemotaxis, signaling and genetic regulatory networks, and stochastic predator-prey dynamics. The emphasis will be on practical simulation and analysis of stochastic phenomena in biological systems. Numerical methods will be developed using a combination of MATLAB, the R statistical package, MCell, and/or URDME, at the discretion of the instructor. Student projects will comprise a major part of the course. Offered as BIOL 319, EECS 319, MATH 319, SYBB 319, BIOL 419, EBME 419, MATH 419, PHOL 419, and SYBB 419 . Prereq: MATH 224 or MATH 223 and BIOL 300 or BIOL 306 and MATH 201 or MATH 307 or consent of instructor.

BIOL 321. Design and Analysis of Biological Experiments. 3 Units.
In this laboratory course, students will learn how to use a computer programming language (MATLAB) to design, execute, and analyze biological experiments. The course will begin with basic programming and continue to data output and acquisition, image analysis, and statistics. Students who are interested in carrying out research projects in any lab setting are encouraged to take this course and use the skills acquired to better organize and analyze their experiments. No prior programming knowledge is assumed. This course satisfies a laboratory requirement of the B.A. in biology. This course satisfies a laboratory or quantitative laboratory requirement of the B.S. in biology. Students will complete a final project on a topic of their choice; graduate students will be required to give an oral presentation of this project. Offered as BIOL 321 and BIOL 421. Counts for CAS Quantitative Reasoning Requirement. Prereq: BIOL 216 or BIOL 251.
BIOL 322. Sensory Biology. 3 Units.
The task of a sensory system is to collect, process, store, and transmit information about the environment. How do sensory systems convert information from the environment into neural information in an animal's brain? This course will explore the ecology, physiology, and behavior of the senses across the animal kingdom. We will cover introductory neurobiology and principles of sensory system organization before delving more deeply into vision, olfaction, audition, mechanosensation, and multi-modal sensory integration. For each sensory modality, we will consider how the sensory system operates and how its operation affects the animal's behavior and ecology. We will also explore the evolution of sensory systems and their specialization for specific behavioral tasks. Students will finish the course with a research project on a topic of their choice; graduate students will present this project to the class. Offered as BIOL 322 and BIOL 422. Prereq: BIOL 216 or BIOL 251.

BIOL 324. Introduction to Stem Cell Biology. 3 Units.
This discussion-based course will introduce students to the exciting field of stem cell research. Students will first analyze basic concepts of stem cell biology, including stem cell niche, cell quiescence, asymmetric cell division, cell proliferation and differentiation, and signaling pathways involved in these processes. This first part of the course will focus on invertebrate genetic models for the study of stem cells. In the second part of the course, students will search for primary research papers on vertebrate and human stem cells, and application of stem cell research in regenerative medicine and cancer. Finally, students will have the opportunity to discuss about ethical controversies in the field. Students will rotate in weekly presentations, and will write two papers during the semester. Students will improve skills on searching and reading primary research papers, gain presentation skills, and further their knowledge in related subjects in the fields of cell biology, genetics and developmental biology. This course may be used as a cell/molecular subject area elective for the B.A. and B.S. Biology degrees. Offered as BIOL 324 and BIOL 424. Prereq: BIOL 325 or BIOL 326 or BIOL 362.

BIOL 325. Cell Biology. 3 Units.
This course will emphasize an understanding of the structure and function of eukaryotic cells from a molecular viewpoint. We will explore cell activities by answering the questions what do cells do and how do they do it. The answers to these questions will be developed using experimental evidence from the literature and explanations from the text. An important part of this course will be appreciation of the experimental evidence which supports our current understanding of cell function. To achieve this aim, students will read papers from the primary literature to supplement the text. Topics will include cell structure, protein structure and function, internal organization of the eukaryotic cell, membrane structure and function, protein sorting, organelle biogenesis, and cytoskeleton structure and function. The course will also cover the life cycles of cells, their interactions and finally use the immune response as a model of cell behavior. Prereq: BIOL 215 or BIOL 250.

BIOL 326. Genetics. 3 Units.
Transmission genetics, nature of mutation, microbial genetics, somatic cell genetics, recombinant DNA techniques and their application to genetics, human genome mapping, plant breeding, transgenic plants and animals, uniparental inheritance, evolution, and quantitative genetics. Offered as BIOL 326 and BIOL 426. Prereq: BIOL 214 or BIOL 250.

BIOL 327. Functional Genomics. 3 Units.
In this course, students will learn how to access and use genomics data to address questions in cell biology, development and evolution. The genome of Drosophila melanogaster will serve as a basis for exploring genome structure and learning how to use a variety of available software to identify similar genes in different species, predict protein sequence and functional domains, design primers for PCR, analyze cis-regulatory sequences, access microarray and RNAseq databases, among others. Classes will be in the format of short lectures, short oral presentations made by students and hands-on experimentation using computers. Discussions will be centered in primary research papers that used these tools to address specific biological questions. The wet-lab component will consist of a research project formulated by a group of 2-3 students that will include basic molecular biology experiments (e.g. PCR and DNA sequencing) to test a hypothesis formulated by the students. Graduate students will be required to make additional presentations of research papers. They also will have additional questions in exams and a distinct page requirement on written assignments. This course satisfies a laboratory requirement of the B.A. in biology. This course satisfies a laboratory or quantitative laboratory requirement of the B.S.in biology. Offered as BIOL 327 and BIOL 427. Prereq: BIOL 214L and BIOL 326.

BIOL 328. Plant Genomics and Proteomics. 3 Units.
The development of molecular tools has impacted agriculture as much as human health. The application of new techniques to improve food crops, including the development of genetically modified crops, has also become controversial. This course covers the nature of the plant genome and the role of sequenced-based methods in the identification of the genes. The application of the whole suite of modern molecular tools to understand plant growth and development, with specific examples related agronomically important responses to biotic and abiotic stresses, is included. The impact of the enormous amounts of data generated by these methods and their storage and analysis (bioinformatics) is also considered. Finally, the impact on both the developed and developing world of the generation and release of genetically modified food crops will be covered. Recommended preparation: BIOL 326. Offered as BIOL 328 and BIOL 428.

BIOL 333. The Human Microbiome. 3 Units.
This departmental seminar is designed to reveal how the abundant community of human-associated microorganisms influence human development, physiology, immunity and nutrition. Using a survey of current literature, this discussion-based course will emphasize an understanding of the complexity and dynamics of human/microbiome interactions and the influence of environment, genetics and individual life histories on the microbiome and human health. Grades will be based on participation, written assignments, exams, an oral presentation and a final paper. Prerequisites are completion of BIOL 214 and BIOL 216. This class is offered as a SAGES Departmental Seminar and fulfills an Organismal breadth requirement of the BA and BS in Biology. Currently the class is not open to graduate students. Counts as SAGES Departmental Seminar. Prereq: BIOL 214 and BIOL 216.

BIOL 334. Structural Biology. 3 Units.
Introduces basic chemical properties of proteins and discusses the physical forces that determine protein structure. Topics include: the elucidation of protein structure by NMR and by X-ray crystallographic methods; the acquisition of protein structures from data bases; and simple modeling experiments based on protein structures. Offered as BIOC 334, BIOC 334, BIOC 434, and BIOC 434.
BIOL 336. Aquatic Biology. 3 Units.
Physical, chemical, and biological dynamics of lake ecosystems. Factors governing the distribution, abundance, and diversity of freshwater organisms. Offered as BIOL 336 and BIOL 436. Prereq: BIOL 214 or BIOL 251.

BIOL 338. Ichthyology. 4 Units.
Biology of fishes. Students will develop fundamental understanding of the evolutionary history and systematics of fishes to provide a context within which they can address aspects of biology including anatomy, physiology (e.g., in species that change sex; osmoregulation in freshwater vs. saltwater), and behavior (e.g., visual, auditory, chemical, electric communication; social structures), ecology, and evolution (e.g., speciation). We will explore the biodiversity of fishes around the world, with emphasis on Ohio species, by examining preserved specimens, observing captive living specimens, and observing, capturing, and identifying wild fishes in their natural habitats. Practical applications will be emphasized, such as aquaculture, fisheries management, and biomedical research. Course will conclude with an analysis of the current global fisheries crisis that has resulted from human activities. There will be many field trips and networking with the Cleveland Metroparks Zoo, the Cleveland Museum of Natural History, and local, state, and federal government agencies. Some classes meet at the Cleveland Museum of Natural History. This course satisfies a laboratory requirement of the B.A. and B.S. in biology. The graduate version of the course requires a research project and term paper. Offered as BIOL 338 and BIOL 438. Prereq: BIOL 216 or BIOL 251.

BIOL 339. Aquatic Biology Laboratory. 2 Units.
The physical, chemical, and biological limnology of freshwater ecosystems will be investigated. Emphasis will be on identification of the organisms inhabiting these systems and their ecological interactions with each other. This course will combine both field and laboratory analysis to characterize and compare the major components of these ponds. Students will have the opportunity to design and conduct individual projects. Prereq or Coreq: BIOL 336.

BIOL 340. Human Physiology. 3 Units.
This course will provide functional correlates to the students’ previous knowledge of human anatomy. Building upon the basic principles covered in BIOL 216 and 346, the physiology of organs and organ systems of humans, including the musculoskeletal, nervous, cardiovascular, lymphatic, immune, respiratory, digestive, excretory, reproductive, and endocrine systems, will be studied at an advanced level. The contribution of each system to homeostasis will be emphasized. Prereq: BIOL 346 and BIOL 215 and BIOL 216 or BIOL 346 and BIOL 250 and BIOL 251

BIOL 342. Parasitology. 3 Units.
This course will introduce students to classical and current parasitology. Students will discuss basic principles of parasitology, parasite life cycles, host-parasite interaction, therapeutic and control programs, epidemiology, and ecological and societal considerations. The course will explore diverse classes of parasitic organisms with emphasis on protozoan and helminthic diseases and the parasites’ molecular biology. Group discussion and selected reading will facilitate further integrative learning and appreciation for parasite biology. This course counts as an elective in the cell/molecular biology subject area for the Biology BA and BS degrees. Offered as BIOL 342 and BIOL 442. Prereq: BIOL 214, 215, 216 and 326.

BIOL 343. Microbiology. 3 Units.
The physiology, genetics, biochemistry, and diversity of microorganisms. The subject will be approached both as a basic biological science that studies the molecular and biochemical processes of cells and viruses, and as an applied science that examines the involvement of microorganisms in human disease as well as in workings of ecosystems, plant symbioses, and industrial processes. The course is divided into four major areas: bacteria, viruses, medical microbiology, and environmental and applied microbiology. Offered as BIOL 343 and BIOL 443. Prereq: BIOL 215 or BIOL 250.

BIOL 344. Laboratory for Microbiology. 3 Units.
Practical microbiology, with an emphasis on bacteria as encountered in a variety of situations. Sterile techniques, principles of identification, staining and microscopy, growth and nutritional characteristics, genetics, enumeration methods, epidemiology, immunological techniques (including ELISA and T cell identification), antibiotics and antibiotic resistance, chemical diagnostic tests, sampling the human environment, and commercial applications. One three hour lab plus one lecture per week. Prereq or Coreq: BIOL 343.

BIOL 345. Mammal Diversity and Evolution. 4 Units.
This course focuses on the anatomical and taxonomic diversity of mammals in an evolutionary context. The emphasis is on living (extant) mammals, but extinct mammals are also discussed. By the end of the course, students will be able to: (1) describe the key anatomical and physiological features of mammals; (2) name all orders and most families of living mammals; (3) identify a mammal skull to order and family; (4) understand how to create and interpret a phylogenetic tree; (5) appreciate major historical patterns in mammal diversity and biogeography as revealed by the fossil record. Two student-led seminars and one lab each week. Most labs will take place at the Cleveland Museum of Natural History. One weekend field trip to Cleveland Metroparks Zoo. This course satisfies a laboratory requirement for the biology major. Offered as ANAT 445, BIOL 345, and BIOL 445. Prereq: BIOL 214.

BIOL 346. Human Anatomy. 3 Units.
Gross anatomy of the human body. Two lectures and one laboratory demonstration per week. Prereq: BIOL 216 or BIOL 251.

BIOL 351. Principles of Ecology. 3 Units.
This lecture course explores spatial and temporal relationships involving organisms and the environment at individual, population, and community levels. An underlying theme of the course will be neo-Darwinian evolution through natural selection with an emphasis on organismal adaptations to abiotic and biotic environments. Studies and models will illustrate ecological principles, and there will be some emphasis on the applicability of these principles to ecosystem conservation. Students taking the graduate level course will prepare a grant proposal in which hypotheses will be based on some aspect of ecological theory. Offered as BIOL 351 and BIOL 451. Prereq: BIOL 214 or BIOL 251.
BIOL 351L. Principles of Ecology Laboratory. 2 Units.
Students in this laboratory course will conduct a variety of ecological investigations that are designed to examine relationships involving organisms and the environment at individual, population, and community levels. Descriptive and hypothesis-driven investigations will take place at Case Western Reserve University's Squire Valleeve Farm, in both field and greenhouse settings. The course is designed to explore as well as test a variety of ecological paradigms. Students taking the graduate level course will prepare a grant proposal in which hypotheses will be based on a select number of lab investigations. This course satisfies a laboratory requirement for biology majors. Recommended preparation for BIOL 451L: prior or concurrent enrollment in BIOL 451. Offered as BIOL 351L and BIOL 451L. Prereq or Coreq: BIOL 351.

BIOL 352. Ecology and Evolution of Infectious Diseases. 3 Units.
This course explores the effects of infectious diseases on populations of hosts, including humans and other animals. We will use computer models to study how infectious diseases enter and spread through populations, and how factors like physiological and behavioral differences among host individuals, host and pathogen evolution, and the environment affect this spread. Our emphasis will be on understanding and applying quantitative models for studying disease spread and informing policy in public health and conservation. To that end, computer labs are the central component of the course. This course satisfies a laboratory requirement of the B.A. in biology. This course satisfies a laboratory or quantitative laboratory requirement of the B.S. in biology. Offered as BIOL 352 and BIOL 452. Prereq: (BIOL 214 or BIOL 251) and (MATH 121 or MATH 125) and (MATH 122 or MATH 126).

BIOL 353. Ecophysiology of Global Change. 4 Units.
Global change is an emerging threat to human health and economic stability. Rapid changes in climate, land use, and prevalence of non-native species generate novel conditions outside the range of typical conditions under which organisms evolved. Already we are witnessing the global redistribution of plants and animals, changes in the timing of critical life cycle events, and in some cases local extinction of populations. This course explores the impacts of global change on biological systems at levels from individuals to ecosystems; among animals, plants and microbes; across ecological to evolutionary timescales; and from local to global spatial scales. Throughout, physiology is emphasized as a core driver of biological responses to global change. Traditional lectures will be accompanied by discussions of primary literature articles. The laboratory component will involve the development of an independent project at the University Farm, and dissemination of results through traditional (e.g. written paper) and new (e.g. podcast) media. This class will fulfill a laboratory requirement of the B.A. in Biology. This class will fulfill an additional laboratory requirement of the B.S. in Biology. Offered as BIOL 353 and BIOL 453. Prereq: BIOL 214 and BIOL 216.

BIOL 357. Backyard Behavior Capstone. 3 Units.
Interesting animal behavior is all around us. We need not go into a laboratory to observe it, but laboratory tools can help to understand the behaviors that we encounter every day. We interact with animals in our homes, in forests and wilderness areas and even in our own backyards. As pet dogs or cats interact with wild squirrels and birds, they provide insights regarding predation, neuromechanics, and mating behaviors, just to list a few concepts. This course takes advantage of the rich behavior that exists around us to provide a capstone experience for students who have an interest in animal behavior. The course will be open to 10 senior Biology majors who have emphasized the animal behavior and neurobiology courses offered by the Biology department. Each student will have taken at least one advanced course in Animal Behavior, Neurobiology, or Neuroethology. Entry into the course will be by permit, and permits will be issued only after an interview in which each student demonstrates to the instructor a deep interest in animal behavior and underlying neural control systems. Through classroom discussion, viewing of behaviorally-based video shows, and field trips, each student will choose one behavior to investigate in detail over the course of the semester. In order to move beyond casual observation to in-depth analysis, video cameras will be available to the students, as well as computer based motion analysis systems. The class will meet as a group twice weekly. During this formal classroom period, students will discuss behaviors in general and, as the course progresses, the specific topics that each student is investigating. They will present journal articles that are relevant to their topics, a prospectus on their intended study, and ultimately describe their projects outside of class time and will present a poster at a public poster fair. Counts as SAGES Senior Capstone. Prereq: BIOL 305 or BIOL 318 or BIOL 358 or BIOL 373 or BIOL 374.

BIOL 358. Animal Behavior. 4 Units.
Ultimately the success or failure (i.e., life or death) of any individual animal is determined by its behavior. The ability to locate and capture food, avoid being food, acquiring and defending territory, and successfully passing your genes to the next generation, are all dependent on complex interactions between an animal's design, environment and behavior. This course will be an integrative approach emphasizing experimental studies of animal behavior. You will be introduced to state-of-the-art approaches to the study of animal behavior, including neural and hormonal mechanisms, genetic and developmental mechanisms and ecological and evolutionary approaches. We will learn to critique examples of current scientific papers, and learn how to conduct observations and experiments with real animals. We will feature guest appearances by the Curator of Research from the Cleveland MetroParks Zoo and visits to working animal behavior research labs here at CWRU. Group discussions and writing will be emphasized. This course satisfies a laboratory requirement for biology majors. Offered as BIOL 358 and BIOL 458. Prereq: BIOL 214 and BIOL 215 and BIOL 216 or BIOL 250 and BIOL 251.
BIOL 359. Genetic Basis of Behavior. 3 Units.
In this course, students will discuss scientific papers on Drosophila behavior. Emphasis will be given to studies that employ the powerful genetic tools available in Drosophila to the study of behavior. The topics covered will include: innate behaviors (e.g. sexual behavior); learning and memory; sensory information processing; anatomy of the Drosophila adult brain; genetic screenings for behavioral mutants; genetic tools to interfere with behavioral response. Students will be required to write and develop an objective project that combines genetics with behavioral tests. Students will be graded in presentations as well as a final grant proposal. Lab component will consist of experimentation in files using genetics and behavioral analyses, to be carried out in the last 6 weeks of the course. Counts as a Biology laboratory course for the B.A. and B.S. Biology degrees. Offered as BIOL 359 and BIOL 459. Prereq: BIOL 216 or BIOL 251.

BIOL 362. Principles of Developmental Biology. 3 Units.
The descriptive and experimental aspects of animal development. Gametogenesis, fertilization, cleavage, morphogenesis, induction, differentiation, organogenesis, growth, and regeneration. Students taking the graduate-level course will prepare an NIH-format research proposal as the required term paper. Offered as BIOL 362 and BIOL 462 and ANAT 462. Prereq: BIOL 216 or BIOL 251 or EBME 201 and EBME 202.

BIOL 363. Experimental Developmental Biology. 3 Units.
This laboratory course will teach concepts and techniques in developmental biology. Emphasis will be on the mechanisms that pattern the embryo during development and how these mechanisms are explored using molecular, cellular, and genetic approaches. A term research paper is required. Students taking the graduate level course will prepare a grant proposal. One laboratory and one lecture per week. Offered as BIOL 363 and BIOL 463. Prereq: BIOL 362.

BIOL 364. Research Methods in Evolutionary Biology. 3 Units.
The process of evolution explains not only how the present diversity of life on earth has formed, but also provides insights into current pressing issues today, including the spread of antibiotic resistance, the causes of geographic variation in genetic diseases, and explanations for modern patterns of extinction risk. Students in Research Methods in Evolutionary Biology will be introduced to several of the major research approaches of evolutionary biology, including methods of measuring natural selection on the phenotypic and genotypic levels, quantifying the rate of evolution, reconstructing evolutionary relationships, and assessing the factors that affect rates of speciation and extinction. The course will consist of a combination of interactive lectures, in-class problem solving and data analysis, and the discussion of peer-reviewed scientific papers. Grades are based on participation in class, discussions and written summaries of published papers, in-class presentations, and two writing assignments. Offered as BIOL 364 and BIOL 464. Counts as SAGES Departmental Seminar. Prereq: BIOL 214 or BIOL 251.

BIOL 365. Evo-Devo: Evolution of Body Plans. 3 Units.
This discussion-based course offers a detailed introduction to Evolutionary Developmental Biology. The field seeks to explain evolutionary events through the mechanisms of Developmental Biology and Genetics. The course is structured into different modules. First we will look at the developmental genetic mechanisms that can cause variation. Then we focus on how alterations of these mechanisms can generate novel structural changes. We will then examine a few areas of active debate, where Evo-Devo is attempting to solve major problems in evolutionary biology. We will conclude with two writing assignments. Students will be required to present, read, and discuss primary literature in each module. Offered as BIOL 365 and BIOL 465. Counts as SAGES Departmental Seminar. Prereq: BIOL 225 or BIOL 251 or BIOL 362.

BIOL 366. Topics in Evolutionary Biology. 3 Units.
The focus for this course on a special topic of interest in evolutionary biology will vary from one offering to the next. Examples of possible topics include theories of speciation, the evolution of language, the evolution of sex, evolution and biodiversity, molecular evolution. ANAT/ANTH/EEPS/PHIL/PHOL 467/BIOL 468 will require a longer, more sophisticated term paper, and additional class presentation. Offered as ANTH 367, BIOL 367, EEPS 367, PHIL 367, ANAT 467, ANTH 467, BIOL 468, EEPS 467, PHIL 467 and PHOL 467. Prereq: BIOL 225 or equivalent.

BIOL 369. Evolutionary Biology Capstone. 3 Units.
This course focuses on a special topic of interest in evolutionary biology that will vary from one offering to the next. Examples of possible topics include theories of speciation, the evolution of language, the evolution of sex, evolution and biodiversity, molecular evolution. Students will participate in discussions and lead class seminars on evolutionary topics and in collaboration with an advisor or advisors, select a topic for a research paper or project. Each student will write a major research report or complete a major project and will make a public presentation of her/his findings. Offered as ANTH 369, BIOL 369, and PHIL 369. Counts as SAGES Senior Capstone.

BIOL 373. Introduction to Neurobiology. 3 Units.
How nervous systems control behavior. Biophysical, biochemical and molecular biological properties of nerve cells, their organization into circuitry, and their function within networks. Emphasis on quantitative methods for modeling neurons and networks, and on critical analysis of the contemporary technical literature in the neurosciences. Term paper required for graduate students. This course satisfies a lab requirement for the B.A. in Biology, and a Quantitative Laboratory requirements for the B.S. in Biology. Offered as BIOL 373, BIOL 473, and NEUR 473.

BIOL 374. Neurobiology of Behavior. 3 Units.
In this course, students will examine how neurobiologists interested in animal behavior study the linkage between neural circuitry and complex behavior. Various vertebrate and invertebrate systems will be considered. Several exercises will be used in this endeavor. Although some lectures will provide background and context on specific neural systems, the emphasis of the course will be on classroom discussion of specific journal articles. In addition, students will each complete a project in which they will observe some animal behavior and generate both behavioral and neurobiological hypotheses related to it. In lieu of examinations, students will complete three written assignments, including a theoretical proposal, one-page Specific Aims paper related to the project, and a final project paper. These assignments are designed to give each student experience in writing biologically-relevant documents. Classroom discussions will help students understand the content and format of each type document. They will also present their projects orally to the entire class. Offered as BIOL 374, BIOL 474, and NEUR 474. Counts as SAGES Departmental Seminar.

BIOL 375. Neurobiology Laboratory. 3 Units.
Introduction to the basic laboratory techniques of neurobiology. Intracellular and extracellular recording techniques, forms of synaptic plasticity, patch clamping, immunohistochemistry and confocal microscopy. During the latter weeks of the course students will be given the opportunity to conduct an independent project. One laboratory and one discussion session per week. Recommended preparation for BIOL 476 and NEUR 476: BIOL 216. Offered as BIOL 376, BIOL 476 and NEUR 476. Prereq: BIOL 216 or BIOL 251.
BIOL 377. Biorobotics Team Research. 3 Units.
Many exciting research opportunities cross disciplinary lines. To participate in such projects, researchers must operate in multi-disciplinary teams. The Biorobotics Team Research course offers a unique capstone opportunity for undergraduate students to utilize skills they developed during their undergraduate experience while acquiring new teaming skills. A group of eight students form a research team under the direction of two faculty leaders. Team members are chosen from appropriate majors through interviews with the faculty. They will research a biological mechanism or principle and develop a robotic device that captures the actions of that mechanism. Although each student will cooperate on the team, they each have a specific role, and must develop a final paper that describes the research generated on their aspect of the project. Students meet for one class period per week and two 2-hour lab periods. Initially students brainstorm ideas and identify the project to be pursued. They then acquire biological data and generate robotic designs. Both are further developed during team meetings and reports. Final oral reports and a demonstration of the robotic device occur in week 15. Offered as BIOL 377, EMAE 377, BIOL 477, and EMAE 477. Counts as SAGES Senior Capstone.

BIOL 378. Computational Neuroscience. 3 Units.
Computer simulations and mathematical analysis of neurons and neural circuits, and the computational properties of nervous systems. Students are taught a range of models for neurons and neural circuits, and are asked to implement and explore the computational and dynamic properties of these models. The course introduces students to dynamical systems theory for the analysis of neurons and neural learning, models of brain systems, and their relationship to artificial and neural networks. Term project required. Students enrolled in MATH 478 will make arrangements with the instructor to attend additional lectures and complete additional assignments addressing mathematical topics related to the course. Recommended preparation: MATH 223 and MATH 224 or BIOL 300 and BIOL 306. Offered as BIOL 378, COGS 378, MATH 378, BIOL 478, EBME 478, EECS 478, MATH 478 and NEUR 478.

BIOL 382. Drugs, Brain, and Behavior. 3 Units.
This course is concerned with the mechanisms underlying neurochemical signaling and the impact of drugs on those mechanisms. The first half of the course emphasizes the fundamental mechanisms underlying intra- and extracellular communication of neurons and the basic principles of how drugs interact with the nervous system. The second half of the course emphasizes understanding the neural substrates of disorders of the nervous system, and the mechanisms underlying the therapeutic effects of drugs at the cellular and behavioral levels. This course will consist of lectures designed to give the student necessary background for understanding these basic principles and class discussion. The class discussion will include viewing video examples of behavioral effects of disorders of the nervous system, and analysis of research papers. The goal of the class discussions is to enhance the critical thinking skills of the student and expose the student to contemporary research techniques. Offered as BIOL 382, BIOL 482, and NEUR 482. Prereq: BIOL 215 and BIOL 216 or BIOL 250 and BIOL 251

BIOL 384. Reading and Writing Like an Ecologist. 3 Units.
Students usually learn from textbooks, but scientists communicate with each other through journal articles. The purpose of this class is to help you learn to read and write like an ecologist. We will spend our time reading and discussing journal articles about three or four issues in ecology, including papers from both empirical and theoretical perspectives. In addition to the science, we’ll talk about strategies for how to keep reading when you encounter something you don’t understand and what makes a paper well or poorly written. At the end of each section, you will synthesize your ideas into a review article. Your initial paper will be submitted to me as hypothetical journal editor. I will send your paper out for review to two fellow classmates, and I’ll send their comments back to you along with brief comments of my own. As all scientists know, it is virtually unheard of for a journal to accept a paper for publication without revisions. After this peer review, you will revise your papers and resubmit them to me. Your grade will be based on your participation in class discussions, your papers (both drafts) and your work as a reviewer for other students. Counts as SAGES Departmental Seminar. Prereq: BIOL 214 or BIOL 251.

BIOL 385. Seminar on Biological Processes in Learning and Cognition. 3 Units.
Students will read and discuss research papers on a range of topics relevant to the biological processes that lead to cognition and learning in humans. Sample topics are: cellular and molecular mechanisms of memory; visual sensory detection of images, movement, and color; role of slow neurotransmitters in synaptic plasticity; cortical distribution of cognitive functions such as working memory, decision making, and image analysis; functions of emotion-structures and their role in cognition; brain structures and mechanisms involved in language creation; others. Some papers will be assigned and others will be selected by students. Discussions will focus on the methods used, the experimental results, and the interpretations of significance. Students will work in groups on a semester project to be presented near the end of the semester. Counts as SAGES Senior Capstone. Prereq: BIOL 302.

BIOL 388. Undergraduate Research. 1 - 3 Unit.
Guided laboratory research under the sponsorship of a biology faculty member. May be carried out within the biology department or in associated departments. Appropriate forms must be secured in the biology department office. A written report must be approved by the biology sponsor and submitted to the chairman of the biology department before credit is granted. Only 3 credit-hours may count towards the biology majors or minor. Offered as BIOL 388 and SYBB 388.

BIOL 388S. Undergraduate Research - SAGES Capstone. 3 Units.
Guided laboratory research under the sponsorship of a biology faculty member. May be carried out within the biology department or in associated departments. May be taken only one semester during the student's academic career. Appropriate forms must be secured in the biology department office. A written report must be approved by the biology sponsor and submitted to the chairman of the biology department before credit is granted. A public presentation is required. Offered as BIOL 388S and SYBB 388S. Counts as SAGES Senior Capstone.

BIOL 389. Selected Topics. 1 - 3 Unit.
Individual library research projects completed under the guidance of a biology sponsor. May be carried out within the biology department or in associated departments. Appropriate forms must be secured in the biology department office. A written report must be approved by the biology sponsor and submitted to the chairman of the biology department before credit is granted. Only 3 credit-hours may count towards the biology majors or minor.
BIOL 390. Advanced Undergraduate Research. 1 - 3 Unit.
Offered on a credit only basis. Students may carry out research in biology or related departments, but a biology sponsor is required. Does not count toward the total number of hours required for graduation. A written report must be submitted to the chairman's office and approved before credit is granted. Prereq: BIOL 388 or BIOL 388S.

BIOL 394. Seminar in Evolutionary Biology. 3 Units.
This seminar investigates 20th-century evolutionary theory, especially the Modern Evolutionary synthesis and subsequent expansions of and challenges to that synthesis. The course encompasses the multidisciplinary nature of the science of evolution, demonstrating how disciplinary background influences practitioners' conceptualizations of pattern and process. This course emphasizes practical writing and research skills, including formulation of testable theses, grant proposal techniques, and the implementation of original research using the facilities on campus and at the Cleveland Museum of Natural History. Offered as ANTH 394, BIOL 394, EEPS 394, HSTY 394, PHIL 394, ANTH 494, BIOL 494, EEPS 494, HSTY 494, and PHIL 494.

BIOL 395. Research Discussions. 1 Unit.
This is a seminar course which provides a forum within which students performing undergraduate research, or who have done so previously, can present and discuss their projects. Discussions will cover all aspects of the students' research projects: background material, experimental design and methods, results and their analysis and conclusions. At the beginning of the semester, each student will briefly outline his or her project and distribute a few key papers to provide background reading for all participants. After this introductory phase, each student will make a presentation of his/her own research. Graded as pass/fail, based upon attendance and participation. Prereq: BIOL 388. Prereq or coreq: BIOL 390.

BIOL 396. Undergraduate Research in Evolutionary Biology. 3 Units.
Students propose and conduct guided research on an aspect of evolutionary biology. The research will be sponsored and supervised by a member of the CASE faculty or other qualified professional. A written report must be submitted to the Evolutionary Biology Steering Committee before credit is granted. Offered as ANTH 396, BIOL 396, EEPS 396, and PHIL 396.

BIOL 397. Molecular Phylogenetics. 4 Units.
This course is designed to teach the theory and practice of molecular based phylogenetics with attention to evolutionary analysis through lecture, readings, discussion, and a quantitative laboratory section. A comprehensive overview of the history of systematics and morphology based phylogenetics will help familiarize students with the theory, methods, and character analysis frameworks used in current genetic based approaches. A laboratory section of the course will provide working knowledge in designing and carrying out an original phylogenetics project beginning with data procurement to writing a research manuscript. Through readings and discussions of research articles as well as presented content, the relevant course material will be utilized in practice by students analyzing their project data sets. The semester-long research project will take students through the process of building a data set, aligning sequences, reconstructing phylogenies, conducting evolutionary analyses, and interpreting and writing results as a scientific manuscript. In addition, students will orally present their research proposal as well as the final research project. Undergraduate students will work in teams of two on the research project component of the course and independently throughout the other course components (discussions). Graduate students will work independently and have an extra assignment. This course satisfies a laboratory requirement of the B.A. in Biology. This course satisfies a laboratory or quantitative laboratory requirement of the B.S. in Biology. Offered as: BIOL 397 and BIOL 497. Prereq: BIOL 214 and (BIOL 225 or BIOL 364).

BIOL 401. Biotechnology Laboratory: Genes and Genetic Engineering. 3 Units.
Laboratory training in recombinant DNA techniques. Basic microbiology, growth, and manipulation of bacteriophage, bacteria and yeast. Students isolate and characterize DNA, construct recombinant DNA molecules, and reintroduce them into eukaryotic cells (yeast, plant, animal) to assess their viability and function. Two laboratories per week. Offered as BIOL 301 and BIOL 401.

BIOL 402. Principles of Neural Science. 3 Units.
Lecture/discussion course covering concepts in cell and molecular neuroscience, principles of systems neuroscience as demonstrated in the somatosensory system, and fundamentals of the development of the nervous system. This course will prepare students for upper level Neuroscience courses and is also suitable for students in other programs who desire an understanding of neurosciences. Recommended preparation: CBIO 453. Offered as BIOL 402 and NEUR 402.

BIOL 404. Fitting Models to Data: Maximum Likelihood Methods and Model Selection. 3 Units.
This course will introduce students to maximum likelihood methods for fitting models to data and to ways of deciding which model is best supported by the data (model selection). Along the way, students will learn some basic tenets of probability and develop competency in R, a commonly used statistical package. Examples will be drawn from ecology, epidemiology, and potentially other areas of biology. The second half of the course is devoted to in-class projects, and students are encouraged to bring their own data. Offered as BIOL 304 and BIOL 404. Prereq: MATH 121 and 122 OR MATH 125 and 126 or consent of instructor.
Biology 407. Introduction to Biochemistry: From Molecules To Medical Science. 4 Units.
Overview of the macromolecules and small molecules key to all living systems. Topics include: protein structure and function; enzyme mechanisms, kinetics and regulation; membrane structure and function; bioenergetics; hormone action; intermediary metabolism, including pathways and regulation of carbohydrate, lipid, amino acid, and nucleotide biosynthesis and breakdown. The material is presented to build links to human biology and human disease. One semester of biology is recommended. Offered as BIOL 307, BIOL 407, and BIOL 417. Prereq: CHEM 223 and CHEM 224.

Biology 408. Molecular Biology. 4 Units.
An examination of the flow of genetic information from DNA to RNA to protein. Topics include: nucleic acid structure; mechanisms and control of DNA, RNA, and protein biosynthesis; recombinant DNA; and mRNA processing and modification. Where possible, eukaryotic and prokaryotic systems are compared. Special topics include yeast as a model organism, molecular biology of cancer, and molecular biology of the cell cycle. Current literature is discussed briefly as an introduction to techniques of genetic engineering. Recommended preparation: BIOL 307. Offered as BIOL 308, BIOL 408, and BIOL 408. Prereq: BIOL 215 or BIOL 307.

Biology 415. Quantitative Biology Laboratory. 3 Units.
This course will apply a range of quantitative techniques to explore structure-function relations in biological systems. Using a case study approach, students will explore causes of impairments of normal function, will assemble diverse sets of information into a database format for the analysis of causes of impairment, will analyze the data with appropriate statistical and other quantitative tools, and be able to communicate their results to both technical and non-technical audiences. The course has one lecture and one lab per week. Students will be required to maintain a journal of course activities and demonstrate mastery of quantitative tools and statistical techniques. Graduate students will have a final project that applies these techniques to a problem of their choice. Offered as BIOL 315 and BIOL 415.

Biology 416. Fundamental Immunology. 4 Units.
Introductory immunology providing an overview of the immune system, including activation, effector mechanisms, and regulation. Topics include antigen-antibody reactions, immunologically important cell surface receptors, cell-cell interactions, cell-mediated immunity, innate versus adaptive immunity, cytokines, and basic molecular biology and signal transduction in B and T lymphocytes, and immunopathology. Three weekly lectures emphasize experimental findings leading to the concepts of modern immunology. An additional recitation hour is required to integrate the core material with experimental data and known immune mediated diseases. Five mandatory 90 minute group problem sets per semester will be administered outside of lecture and recitation meeting times. Graduate students will be graded separately from undergraduates, and 22 percent of the grade will be based on a critical analysis of a recently published, landmark scientific article. Offered as BIOL 316, BIOL 416, CLBY 416, PATH 316 and PATH 416. Prereq: Graduate standing.

Biology 417. Cytokines: Function, Structure, and Signaling. 3 Units.
Regulation of immune responses and differentiation of leukocytes is modulated by proteins (cytokines) secreted and/or expressed by both immune and non-immune cells. Course examines the function, expression, gene organization, structure, receptors, and intracellular signaling of cytokines. Topic include regulatory and inflammatory cytokines, colony stimulating factors, chemokines, cytokine and cytokine receptor gene families, intracellular signaling through STAT proteins and tyrosine phosphorylation, clinical potential, and genetic defects. Lecture format using texts, scientific reviews and research articles. Recommended preparation: PATH 416 or equivalent. Offered as BIOL 417, CLBY 417, and PATH 417.

Biology 418. Introductory Entomology. 4 Units.
The goal of this course is to discover that, for the most part, insects are not aliens from another planet. Class meetings will alternate; with some structured as lectures, while others are laboratory exercises. Sometimes we will meet at the Cleveland Museum of Natural History, or in the field to collect and observe insects. The 50 minute discussion meeting once a week will serve to address questions from both lectures and lab exercises. The students will be required to make a small but comprehensive insect collection. Early in the semester we will focus on collecting the insects, and later, when insects are gone for the winter, we will work to identify the specimens collected earlier. Students will be graded based on exams, class participation and their insect collections. Offered as BIOL 318 and BIOL 418. Prereq: BIOL 214, and BIOL 215, and BIOL 216.

Biology 419. Applied Probability and Stochastic Processes for Biology. 3 Units.
Applications of probability and stochastic processes to biological systems. Mathematical topics will include: introduction to discrete and continuous probability spaces (including numerical generation of pseudo random samples from specified probability distributions), Markov processes in discrete and continuous time with discrete and continuous sample spaces, point processes including homogeneous and inhomogeneous Poisson processes and Markov chains on graphs, and diffusion processes including Brownian motion and the Ornstein-Uhlenbeck process. Biological topics will be determined by the interests of the students and the instructor. Likely topics include: stochastic ion channels, molecular motors and stochastic ratchets, actin and tubulin polymerization, random walk models for neural spike trains, bacterial chemotaxis, signaling and genetic regulatory networks, and stochastic predator-prey dynamics. The emphasis will be on practical simulation and analysis of stochastic phenomena in biological systems. Numerical methods will be developed using a combination of MATLAB, the R statistical package, MCell, and/or URDME, at the discretion of the instructor. Student projects will comprise a major part of the course. Offered as BIOL 319, EECS 319, MATH 319, SYBB 319, BIOL 419, EBMF 419, MATH 419, PHOL 419, and SYBB 419.

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BIOL 421. Design and Analysis of Biological Experiments. 3 Units.
In this laboratory course, students will learn how to use a computer programming language (MATLAB) to design, execute, and analyze biological experiments. The course will begin with basic programming and continue to data output and acquisition, image analysis, and statistics. Students who are interested in carrying out research projects in any lab setting are encouraged to take this course and use the skills acquired to better organize and analyze their experiments. No prior programming knowledge is assumed. This course satisfies a laboratory or quantitative laboratory requirement of the B.A. in biology. This course satisfies a laboratory or quantitative laboratory requirement of the B.S. in biology. Students will complete a final project on a topic of their choice; graduate students will be required to give an oral presentation of this project. Offered as BIOL 321 and BIOL 421. Counts for CAS Quantitative Reasoning Requirement. Prereq: Graduate standing.

BIOL 422. Sensory Biology. 3 Units.
The task of a sensory system is to collect, process, store, and transmit information about the environment. How do sensory systems convert information from the environment into neural information in an animal’s brain? This course will explore the ecology, physiology, and behavior of the senses across the animal kingdom. We will cover introductory neurobiology and principles of sensory system organization before delving more deeply into vision, olfaction, audition, mechanosensation, and multi-modal sensory integration. For each sensory modality, we will consider how the sensory system operates and how its operation affects the animal’s behavior and ecology. We will also explore the evolution of sensory systems and their specialization for specific behavioral tasks. Students will finish the course with a research project on a topic of their choice; graduate students will present this project to the class. Offered as BIOL 322 and BIOL 422. Prereq: Graduate standing.

BIOL 424. Introduction to Stem Cell Biology. 3 Units.
This discussion-based course will introduce students to the exciting field of stem cell research. Students will first analyze basic concepts of stem cell biology, including stem cell niche, cell quiescence, asymmetric cell division, cell proliferation and differentiation, and signaling pathways involved in these processes. This first part of the course will focus on invertebrate genetic models for the study of stem cells. In the second part of the course, students will search for primary research papers on vertebrate and human stem cells, and application of stem cell research in regenerative medicine and cancer. Finally, students will have the opportunity to discuss about ethical controversies in the field. Students will rotate in weekly presentations, and will write two papers during the semester. Students will improve skills on searching and reading primary research papers, gain presentation skills, and further their knowledge in related subjects in the fields of cell biology, genetics and developmental biology. This course may be used as a cell/molecular subject area elective for the B.A. and B.S. Biology degrees. Offered as BIOL 324 and BIOL 424. Prereq: Graduate standing.

BIOL 426. Genetics. 3 Units.
Transmission genetics, nature of mutation, microbial genetics, somatic cell genetics, recombinant DNA techniques and their application to genetics, human genome mapping, plant breeding, transgenic plants and animals, uniparental inheritance, evolution, and quantitative genetics. Offered as BIOL 326 and BIOL 426.

BIOL 427. Functional Genomics. 3 Units.
In this course, students will learn how to access and use genomics data to address questions in cell biology, development and evolution. The genome of Drosophila melanogaster will serve as a basis for exploring genome structure and learning how to use a variety of available software to identify similar genes in different species, predict protein sequence and functional domains, design primers for PCR, analyze cis-regulatory sequences, access microarray and RNAseq databases, among others. Classes will be in the format of short lectures, short oral presentations made by students and hands-on experimentation using computers. Discussions will be centered in primary research papers that used these tools to address specific biological questions. The wet-lab component will consist of a research project formulated by a group of 2-3 students that will include basic molecular biology experiments (e.g. PCR and DNA sequencing) to test a hypothesis formulated by the students. Graduate students will be required to make additional presentations of research papers. They also will have additional questions in exams and a distinct page requirement on written assignments. This course satisfies a laboratory or quantitative laboratory requirement of the B.S.in biology. Offered as BIOL 327 and BIOL 427. Prereq: Graduate standing.

BIOL 428. Plant Genomics and Proteomics. 3 Units.
The development of molecular tools has impacted agriculture as much as human health. The application of new techniques to improve food crops, including the development of genetically modified crops, has also become controversial. This course covers the nature of the plant genome and the role of sequenced-based methods in the identification of the genes. The application of the whole suite of modern molecular tools to understand plant growth and development, with specific examples related agronomically important responses to biotic and abiotic stresses, is included. The impact of the enormous amounts of data generated by these methods and their storage and analysis (bioinformatics) is also considered. Finally, the impact on both the developed and developing world of the generation and release of genetically modified food crops will be covered. Recommended preparation: BIOL 326. Offered as BIOL 328 and BIOL 428.

BIOL 431. Statistical Methods I. 3 Units.
Application of statistical techniques with particular emphasis on problems in the biomedical sciences. Basic probability theory, random variables, and distribution functions. Point and interval estimation, regression, and correlation. Problems whose solution involves using packaged statistical programs. First part of year-long sequence. Offered as ANAT 431, BIOL 431, CRSP 431, EPBI 431 and MPH 431.

BIOL 432. Statistical Methods II. 3 Units.
Methods of analysis of variance, regression and analysis of quantitative data. Emphasis on computer solution of problems drawn from the biomedical sciences. Design of experiments, power of tests, and adequacy of models. Offered as BIOL 432, EPBI 432, CRSP432 and MPH 432. Prereq: EPBI 431 or equivalent.

BIOL 434. Structural Biology. 3 Units.
Introduces basic chemical properties of proteins and discusses the physical forces that determine protein structure. Topics include: the elucidation of protein structure by NMR and by X-ray crystallographic methods; the acquisition of protein structures from data bases; and simple modeling experiments based on protein structures. Offered as BIOC 334, BIOL 334, BIOC 434, and BIOL 434.

BIOL 436. Aquatic Biology. 3 Units.
Physical, chemical, and biological dynamics of lake ecosystems. Factors governing the distribution, abundance, and diversity of freshwater organisms. Offered as BIOL 336 and BIOL 436.
BIOL 438. Ichthyology. 4 Units.
Biology of fishes. Students will develop fundamental understanding of the evolutionary history and systematics of fishes to provide a context within which they can address aspects of biology including anatomy, physiology (e.g., in species that change sex; osmoregulation in freshwater vs. saltwater), and behavior (e.g., visual, auditory, chemical, electric communication; social structures), ecology, and evolution (e.g., speciation). We will explore the biodiversity of fishes around the world, with emphasis on Ohio species, by examining preserved specimens, observing captive living specimens, and observing, capturing, and identifying wild fishes in their natural habitats. Practical applications will be emphasized, such as aquaculture, fisheries management, and biomedical research. Course will conclude with an analysis of the current global fisheries crisis that has resulted from human activities. There will be many field trips and networking with the Cleveland Metroparks Zoo, the Cleveland Museum of Natural History, and local, state, and federal government agencies. Some classes meet at the Cleveland Museum of Natural History. This course satisfies a laboratory requirement of the B.A. and B.S. in biology. The graduate version of the course requires a research project and term paper. Offered as BIOL 338 and BIOL 438. Prereq: Graduate Standing.

BIOL 442. Parasitology. 3 Units.
This course will introduce students to classical and current parasitology. Students will discuss basic principles of parasitology, parasite life cycles, host-parasite interaction, therapeutic and control programs, epidemiology, and ecological and societal considerations. The course will explore diverse classes of parasitic organisms with emphasis on protozoan and helminthic diseases and the parasites' molecular biology. Group discussion and selected reading will facilitate further integrative learning and appreciation for parasite biology. This course counts as an elective in the cell/molecular biology subject area for the Biology BA and BS degrees. Offered as BIOL 342 and BIOL 442. Prereq: Graduate standing and consent of instructor.

BIOL 443. Microbiology. 3 Units.
The physiology, genetics, biochemistry, and diversity of microorganisms. The subject will be approached both as a basic biological science that studies the molecular and biochemical processes of cells and viruses, and as an applied science that examines the involvement of microorganisms in human disease as well as in workings of ecosystems, plant symbioses, and industrial processes. The course is divided into four major areas: bacteria, viruses, medical microbiology, and environmental and applied microbiology. Offered as BIOL 343 and BIOL 443.

BIOL 445. Mammal Diversity and Evolution. 4 Units.
This course focuses on the anatomical and taxonomic diversity of mammals in an evolutionary context. The emphasis is living (extant) mammals, but extinct mammals are also discussed. By the end of the course, students will be able to: (1) describe the key anatomical and physiological features of mammals; (2) name all orders and most families of living mammals; (3) identify a mammal skull to order and family; (4) understand how to create and interpret a phylogenetic tree; (5) appreciate major historical patterns in mammal diversity and biogeography as revealed by the fossil record. Two student-led seminars and one lab each week. Most labs will take place at the Cleveland Museum of Natural History. One weekend field trip to Cleveland Metroparks Zoo. This course satisfies a laboratory requirement for the biology major. Offered as ANAT 445, BIOL 345, and BIOL 445. Prereq: BIOL 214.

BIOL 451. Principles of Ecology. 3 Units.
This lecture course explores spatial and temporal relationships involving organisms and the environment at individual, population, and community levels. An underlying theme of the course will be neo-Darwinian evolution through natural selection with an emphasis on organismal adaptations to abiotic and biotic environments. Studies and models will illustrate ecological principles, and there will be some emphasis on the applicability of these principles to ecosystem conservation. Students taking the graduate level course will prepare a grant proposal in which hypotheses will be based on some aspect of ecological theory. Offered as BIOL 351 and BIOL 451.

BIOL 451L. Principles of Ecology Laboratory. 2 Units.
Students in this laboratory course will conduct a variety of ecological investigations that are designed to examine relationships involving organisms and the environment at individual, population, and community levels. Descriptive and hypothesis-driven investigations will take place at Case Western Reserve University's Squire Valleyveue Farm, in both field and greenhouse settings. The course is designed to explore as well as test a variety of ecological paradigms. Students taking the graduate level course will prepare a grant proposal in which hypotheses will be based on a select number of lab investigations. This course satisfies a laboratory requirement for biology majors. Recommended preparation for BIOL 451L: prior or concurrent enrollment in BIOL 451. Offered as BIOL 351L and BIOL 451L.

BIOL 452. Ecology and Evolution of Infectious Diseases. 3 Units.
This course explores the effects of infectious diseases on populations of hosts, including humans and other animals. We will use computer models to study how infectious diseases enter and spread through populations, and how factors like physiological and behavioral differences among host individuals, host and pathogen evolution, and the environment affect this spread. Our emphasis will be on understanding and applying quantitative models for studying disease spread and informing policy in public health and conservation. To that end, computer labs are the central component of the course. This course satisfies a laboratory requirement of the B.A. in biology. This course satisfies a laboratory or quantitative laboratory requirement of the B.S. in biology. Offered as BIOL 352 and BIOL 452. Prereq: Graduate standing.

BIOL 453. Ecophysiology of Global Change. 4 Units.
Global change is an emerging threat to human health and economic stability. Rapid changes in climate, land use, and prevalence of non-native species generate novel conditions outside the range of typical conditions under which organisms evolved. Already we are witnessing the global redistribution of plants and animals, changes in the timing of critical life cycle events, and in some cases local extinction of populations. This course explores the impacts of global change on biological systems at levels from individuals to ecosystems; among animals, plants and microbes; across ecological to evolutionary timescales; and from local to global spatial scales. Throughout, physiology is emphasized as a core driver of biological responses to global change. Traditional lectures will be accompanied by discussions of primary literature articles. The laboratory component will involve the development of an independent project at the University Farm, and dissemination of results through traditional (e.g. written paper) and new (e.g. podcast) media. This class will fulfill a laboratory requirement of the B.A. in Biology. This class will fulfill an additional laboratory requirement of the B.S. in Biology. Offered as BIOL 353 and BIOL 453. Prereq: Graduate Standing.
BIOL 454. Coadaptation of Organisms. 3 Units.
This graduate level course will examine biological interactions that result in organismal coadaptation and its ecological implications. Darwin was an avid observer of biological interactions that result in organismal coadaptation and its ecological implications. Darwin was an avid observer of biological interactions and his theory of evolution by natural selection focused primarily on one type of interaction: competition between individuals especially those of the same species. However, Darwin did not explicitly consider the role of cooperation in biological evolution. Nonetheless, cooperation can be a key agent in the coadaptation of organisms and in fact may have led to the evolution of eukaryotes. Three broad types of interactions will be examined in this course: competition, parasitism and cooperation. A particular focus of the course will be on biological cooperation or mutualism. Case studies will be presented to highlight the possible range of biological coadaptation. Lectures will be supplemented by discussion of the relevant literature.

BIOL 457. Conversations on Protein Structure and Function. 2 Units.
The goal of this course is to supplement the short and basic presentation of Proteins in CSMB by lectures and discussions for students with backgrounds in physical-chemical sciences or students who already have a good basic background in protein science. The course presents an overview of Protein structure/function. Following an introduction to the principles of protein structure, the physical basis of protein folding and stability, and a brief overview of structural and bioinformatics approaches to protein analysis is presented. Typically two lecture/discussion style presentations are followed by a student lead journal club on recent high profile papers. The way the Journal club is done is that one student presents a paper (background and figures in powerpoint slides) while presentation of the main figures is shared between the class. Papers and Figures will be assigned by instructor. Typically two papers will be presented per session. Offered as PHOL 456 and BIOL 457.

BIOL 458. Animal Behavior. 4 Units.
Ultimately the success or failure (i.e., life or death) of any individual animal is determined by its behavior. The ability to locate and capture food, avoid being food, acquiring and defending territory, and successfully passing your genes to the next generation, are all dependent on complex interactions between an animal’s design, environment and behavior. This course will be an integrative approach emphasizing experimental studies of animal behavior. You will be introduced to state-of-the-art approaches to the study of animal behavior, including neural and hormonal mechanisms, genetic and developmental mechanisms and ecological and evolutionary approaches. We will learn to critique examples of current scientific papers, and learn how to conduct observations and experiments with real animals. We will feature guest appearances by the Curator of Research from the Cleveland MetroParks Zoo and visits to working animal behavior research labs here at CWRU. Group discussions and writing will be emphasized. This course satisfies a laboratory requirement for biology majors. Offered as BIOL 358 and BIOL 458.

BIOL 459. Genetic Basis of Behavior. 3 Units.
In this course, students will discuss scientific papers on Drosophila behavior. Emphasis will be given to studies that employ the powerful genetic tools available in Drosophila to the study of behavior. The topics covered will include: innate behaviors (e.g. sexual behavior); learning and memory; sensory information processing; anatomy of the Drosophila adult brain; genetic screenings for behavioral mutants; genetic tools to interfere with behavioral response. Students will be required to write and develop an objective project that combines genetics with behavioral tests. Students will be graded in presentations as well as a final grant proposal. Lab component will consist of experimentation in files using genetics and behavioral analyses, to be carried out in the last 6 weeks of the course. Counts as a Biology laboratory course for the B.A. and B.S. Biology degrees. Offered as BIOL 359 and BIOL 459. Prereq: BIOL 216 or BIOL 251.

BIOL 462. Principles of Developmental Biology. 3 Units.
The descriptive and experimental aspects of animal development. Gametogenesis, fertilization, cleavage, morphogenesis, induction, differentiation, organogenesis, growth, and regeneration. Students taking the graduate-level course will prepare an NIH-format research proposal as the required term paper. Offered as BIOL 362 and BIOL 462 and ANAT 462.

BIOL 463. Experimental Developmental Biology. 3 Units.
This laboratory course will teach concepts and techniques in developmental biology. Emphasis will be on the mechanisms that pattern the embryo during development and how these mechanisms are explored using molecular, cellular, and genetic approaches. A term research paper is required. Students taking the graduate level course will prepare a grant proposal. One laboratory and one lecture per week. Offered as BIOL 363 and BIOL 463.

BIOL 464. Research Methods in Evolutionary Biology. 3 Units.
The process of evolution explains not only how the present diversity of life on earth has formed, but also provides insights into current pressing issues today, including the spread of antibiotic resistance, the causes of geographic variation in genetic diseases, and explanations for modern patterns of extinction risk. Students in Research Methods in Evolutionary Biology will be introduced to several of the major research approaches of evolutionary biology, including methods of measuring natural selection on the phenotypic and genotypic levels, quantifying the rate of evolution, reconstructing evolutionary relationships, and assessing the factors that affect rates of speciation and extinction. The course will consist of a combination of interactive lectures, in-class problem solving and data analysis, and the discussion of peer-reviewed scientific papers. Grades are based on participation in class, discussions and written summaries of published papers, in-class presentations, and two writing assignments. Offered as BIOL 364 and BIOL 464. Counts as SAGES Departmental Seminar. Prereq: BIOL 214, BIOL 216, BIOL 251.

BIOL 465. Evo-Devo: Evolution of Body Plans. 3 Units.
This discussion-based course offers a detailed introduction to Evolutionary Developmental Biology. The field seeks to explain evolutionary events through the mechanisms of Developmental Biology and Genetics. The course is structured into different modules. First we will look at the developmental genetic mechanisms that can cause variation. Then we focus on how alterations of these mechanisms can generate novel structural changes. We will then examine a few areas of active debate, where Evo-Devo is attempting to solve major problems in evolutionary biology. We will conclude with two writing assignments. Students will be required to present, read, and discuss primary literature in each module. Offered as BIOL 365 and BIOL 465. Counts as SAGES Departmental Seminar.
BIOL 467. Biorobotics Team Research. 3 Units.
Many exciting research opportunities cross disciplinary lines. To participate in such projects, researchers must operate in multi-disciplinary teams. The Biorobotics Team Research course offers a unique capstone opportunity for undergraduate students to utilize skills they developed during their undergraduate experience while acquiring new teaming skills. A group of eight students form a research team under the direction of two faculty leaders. Team members are chosen from appropriate majors through interviews with the faculty. They will research a biological mechanism or principle and develop a robotic device that captures the actions of that mechanism. Although each student will cooperate on the team, they each have a specific role, and must develop a final paper that describes the research generated on their aspect of the project. Students meet for one class period per week and two 2-hour lab periods. Initially students brainstorm ideas and identify the project to be pursued. They then acquire biological data and generate robotic designs. Both are further developed during team meetings and reports. Final oral reports and a demonstration of the robotic device occur in week 15. Offered as BIOL 377, EMAE 377, BIOL 477, and EMAE 477. Counts as SAGES Senior Capstone.

BIOL 468. Topics in Evolutionary Biology. 3 Units.
The focus for this course on a special topic of interest in evolutionary biology will vary from one offering to the next. Examples of possible topics include theories of speciation, the evolution of language, the evolution of sex, evolution and biodiversity, molecular evolution. ANAT/ANTH/EEPS/PHIL/PHOL 467/BIOL 468 will require a longer, more sophisticated term paper, and additional class presentation. Offered as ANTH 367, BIOL 368, EEPS 367, PHIL 367, ANAT 467, ANTH 467, BIOL 468, EEPS 467, PHIL 467 and PHOL 467.

BIOL 471. Foundations of Advanced Ecology. 3 Units.
Advanced ecology, including discussion of the classic literature, in-depth study of key terms and concepts, applications of these foundational ideas to the modern literature, and current and future directions in the field. Intended for graduate students who have already taken undergraduate ecology (BIOL 351/451 or equivalent). Prereq: Graduate standing.

BIOL 472. Foundations of Advanced Evolution. 3 Units.
Advanced evolutionary biology, including discussion of the classic literature, in-depth study of key terms and concepts, applications of these foundational ideas to the modern literature, and current and future directions in the field. Intended for graduate students who have already taken undergraduate evolution. Prereq: Graduate standing.

BIOL 473. Introduction to Neurobiology. 3 Units.
How nervous systems control behavior. Biophysical, biochemical and molecular biological properties of nerve cells, their organization into circuitry, and their function within networks. Emphasis on quantitative methods for modeling neurons and networks, and on critical analysis of the contemporary technical literature in the neurosciences. Term paper required for graduate students. This course satisfies a lab requirement for the B.A. in Biology, and a Quantitative Laboratory requirements for the B.S. in Biology. Offered as BIOL 373, BIOL 473, and NEUR 473.

BIOL 474. Neurobiology of Behavior. 3 Units.
In this course, students will examine how neurobiologists interested in animal behavior study the linkage between neural circuitry and complex behavior. Various vertebrate and invertebrate systems will be considered. Several exercises will be used in this endeavor. Although some lectures will provide background and context on specific neural systems, the emphasis of the course will be on classroom discussion of specific journal articles. In addition, students will each complete a project in which they will observe some animal behavior and generate both behavioral and neurobiological hypotheses related to it. In lieu of examinations, students will complete three written assignments, including a theoretical grant proposal, a one-page Specific Aims paper related to the project, and a final project paper. These assignments are designed to give each student experience in writing biologically-relevant documents. Classroom discussions will help students understand the content and format of each type document. They will also present their projects orally to the entire class. Offered as BIOL 374, BIOL 474, and NEUR 474. Counts as SAGES Departmental Seminar.

BIOL 476. Neurobiology Laboratory. 3 Units.
Introduction to the basic laboratory techniques of neurobiology. Intracellular and extracellular recording techniques, forms of synaptic plasticity, patch clamping, immunohistochemistry and confocal microscopy. During the latter weeks of the course students will be given the opportunity to conduct an independent project. One laboratory and one discussion session per week. Recommended preparation for BIOL 476 and NEUR 476: BIOL 216. Offered as BIOL 376, BIOL 476 and NEUR 476.

BIOL 478. Computational Neuroscience. 3 Units.
Computer simulations and mathematical analysis of neurons and neural circuits, and the computational properties of nervous systems. Students are taught a range of models for neurons and neural circuits, and are asked to implement and explore the computational and dynamic properties of these models. The course introduces students to dynamical systems theory for the analysis of neurons and neural learning, models of brain systems, and their relationship to artificial and neural networks. Term project required. Students enrolled in MATH 478 will make arrangements with the instructor to attend additional lectures and complete additional assignments addressing mathematical topics related to the course. Recommended preparation: MATH 223 and MATH 224 or BIOL 300 and BIOL 306. Offered as BIOL 378, COGS 378, MATH 378, BIOL 478, EBME 478, EECS 478, MATH 478 and NEUR 478.
BIOL 480. Physiology of Organ Systems. 4 Units.
Our intent is to expand the course from the current 3 hours per week (1.5 hour on Monday and Wednesday) to 4 hours per week (1.5 hours on Monday and Wednesday plus 1 hour on Friday). Muscle structure and function, Myasthenia gravis and Sarcopenia; Central Nervous System, (Synaptic Transmission, Sensory System, Autonomic Nervous System, CNS circuits, Motor System, Neurodegenerative Diseases, Paraplegia and Nerve Compression); Cardiovascular Physiology (Regulation of Pressure and flow; Circulation, Cardiac Cycle, Electrophysiology, Cardiac Function, Control of Cardiovascular function, Hypertension); Hemorraghy, Cardiac Hypertrophy and Fibrillation; Respiration Physiology (Gas Transport and Exchange, Control of Breathing, Acid/base regulation, Cor Pulmonaris and Cystic Fibrosis, Sleeping apnea and Emphysema); Renal Physiology (Glomerular Filtration, Tubular Function/transport, Glomerulonephritis, Tubulopathies); Gastro-Intestinal Physiology (Gastric motility, gastric function, pancreas and bile function, digestion and absorption, Liver Physiology; Pancreatitis, Liver Disease and cirrhosis); Endocrine Physiology (Thyroid, Adrenal glands, endocrine pancreas, Parathyroid, calcium sensing receptor, Cushing and diabetes, Reproductive hormones, eclampsia); Integrative Physiology (Response to exercise, fasting and feeding, aging). For all the classes, the students will receive a series of learning objectives by the instructor to help the students address and focus their attention to the key aspects of the organ physiology (and physiopathology). The evaluation of the students will continue to be based upon the students’ participation in class (60% of the grade) complemented by a mid-term and a final exam (each one accounting for 20% of the final grade). Offered as BIOL 480 and PHOL 480.

BIOL 482. Drugs, Brain, and Behavior. 3 Units.
This course is concerned with the mechanisms underlying neurochemical signaling and the impact of drugs on those mechanisms. The first half of the course emphasizes the fundamental mechanisms underlying intra- and extracellular communication of neurons and the basic principles of how drugs interact with the nervous system. The second half of the course emphasizes understanding the neural substrates of disorders of the nervous system, and the mechanisms underlying the therapeutic effects of drugs at the cellular and behavioral levels. This course will consist of lectures designed to give the student necessary background for understanding these basic principles and class discussion. The class discussion will include viewing video examples of behavioral effects of disorders of the nervous system, and analysis of research papers. The goal of the class discussions is to enhance the critical thinking skills of the student and expose the student to contemporary research techniques. Offered as BIOL 382, BIOL 482, and NEUR 482.

BIOL 491. Contemporary Biology and Biotechnology for Innovation I. 3 Units.
The first half of a two-semester sequence providing an understanding of biology as a basis for successfully launching new high-tech ventures. The course will examine physical limitations to present technologies and the use of biology to identify potential opportunities for new venture creation. The course will provide experience in using biology in both identification of incremental improvements and as the basis for alternative technologies. Case studies will be used to illustrate recent commercially successful (and unsuccessful) biotechnology-based venture creation and will illustrate characteristics for success.

BIOL 492. Contemporary Biology and Biotechnology for Innovation II. 3 Units.
Continuation of BIOL 491 with an emphasis on current and prospective opportunities for Biotechnology Entrepreneurship. Longer term opportunities for Biotechnology Entrepreneurship in emerging areas including (but not limited to) applications of DNA sequence information in medicine and agriculture; energy and the environment; biologically-inspired robots. Recommended preparation: BIOL 491 or consent of department.

BIOL 493. Feasibility and Technology Analysis. 3 Units.
This course provides the tools scientists need to determine whether a technology is ready for commercialization. These tools include (but are not limited to): financial analysis, market analysis, industry analysis, technology analysis, intellectual property protection, the entrepreneurial process and culture, an introduction to entrepreneurial strategy and new venture financing. Deliverables will include a technology feasibility analysis on a possible application in the student's scientific area. Offered as BIOL 493, CHEM 493, and PHYS 493.

BIOL 494. Seminar in Evolutionary Biology. 3 Units.
This seminar investigates 20th-century evolutionary theory, especially the Modern Evolutionary synthesis and subsequent expansions of and challenges to that synthesis. The course encompasses the multidisciplinary nature of the science of evolution, demonstrating how disciplinary background influences practitioners' conceptualizations of pattern and process. This course emphasizes practical writing and research skills, including formulation of testable theses, grant proposal techniques, and the implementation of original research using the facilities on campus and at the Cleveland Museum of Natural History. Offered as ANTH 394, BIOL 394, EEPS 394, HSTY 394, PHIL 394, ANTH 494, BIOL 494, EEPS 494, HSTY 494, and PHIL 494.

BIOL 495. Introduction to Graduate School in the Biological Sciences. 1 Unit.
This course will help incoming Biology MS and Ph.D. students navigate their way through graduate school and participate in the scientific process. Students in the Biology graduate program will be strongly encouraged to take this course in their first year. This will be a skill-based course that will become part of their academic toolbox. In addition, there will be sessions to offer general tips for life in graduate school. Prereq: Graduate Standing.
BIOL 497. Molecular Phylogenetics. 4 Units.
This course is designed to teach the theory and practice of molecular based phylogenetics with attention to evolutionary analysis through lecture, readings, discussion, and a quantitative laboratory section. A comprehensive overview of the history of systematics and morphology based phylogenetics will help familiarize students with the theory, methods, and character analysis frameworks used in current genetic based approaches. A laboratory section of the course will provide working knowledge in designing and carrying out an original phylogenetics project beginning with data procurement to writing a research manuscript. Through readings and discussions of research articles as well as presented content, the relevant course material will be utilized in practice by students analyzing their project data sets. The semester-long research project will take students through the process of building a data set, aligning sequences, reconstructing phylogenies, conducting evolutionary analyses, and interpreting and writing results as a scientific manuscript. In addition, students will orally present their research proposal as well as the final research project. Undergraduate students will work in teams of two on the research project component of the course and independently throughout the other course components (discussions). Graduate students will work independently and have an extra assignment. This course satisfies a laboratory requirement of the B.A. in Biology. Offered as: BIOL 397 and BIOL 497. Prereq: Graduate Standing.

BIOL 541. Topics in Integrative Biology. 1 - 3 Unit.
The goal of this course is to encourage graduate students to think about any question in biology from a broad-based perspective, focusing on the integration of three major themes: 1) evolution and its effects, 2) the cellular basis of life, and 3) systems level control. Each semester, the course may focus on a different topic, but it will be examined from the perspectives of these three focus areas. One faculty instructor with strength in each of these areas will present a few introductory lectures to provide the class with a basic understanding of the topic as it is studied in their area. In this course, students will be required to research a subject not yet covered that semester and develop and present this subject to the class with an emphasis on the strengths in each of these areas. Each semester, a small number of students will present a subject covered that semester and develop and present this subject to the class with an explicit evolutionary, cellular or systems level approach. Students will be graded on the quality of their presentations and the overall level of their participation in class.

BIOL 549. Mathematical Life Sciences Seminar. 1 - 3 Unit.
Continuing seminar on areas of current interest in the applications of mathematics to the life sciences. Allows graduate and advanced undergraduate students to become involved in research. Topics will reflect interests and expertise of the faculty and may include topics in mathematical biology, computational neuroscience, mathematical modeling of biological systems, models of infectious diseases, computational cell biology, mathematical ecology and mathematical biomedicine broadly construed. May be taken more than once for credit.

BIOL 599. Advanced Independent Study for Graduate Students. 1 - 3 Unit.
Independent study of advanced topics in biology under the supervision of a biology faculty member. Registration requires submission of a proposal for a project or study and approval of the department.

BIOL 601. Research. 1 - 9 Unit.

BIOL 651. Thesis M.S.. 1 - 9 Unit.

BIOL 701. Dissertation Ph.D.. 1 - 9 Unit.
Prereq: Predoctoral research consent or advanced to Ph.D. candidacy milestone.

Department of Chemistry
The Department of Chemistry is the largest department representing the chemical sciences at Case Western Reserve University. It consists of 21 faculty members, 16 associated faculty, about 14 postdoctoral associates, approximately 90 graduate students, and over 150 undergraduate students majoring in chemistry. The department offers undergraduate and graduate degree programs leading to the Bachelor of Arts, Bachelor of Science, Master of Science, and Doctor of Philosophy.

The general focus of chemistry is on (1) understanding the basic properties of matter, and (2) employing this knowledge in the design, synthesis, and characterization of materials with novel and useful properties. The various degree programs strive to develop all aspects of the student’s chemical knowledge through a broad range of lecture and laboratory courses.

Chemical research is an integral part of the department’s activities: over $3 million of federal, state, and private research support flows into the department each year. State-of-the-art research facilities are available to both graduate and undergraduate students. Undergraduates are encouraged to participate in research projects with individual faculty members in order to expand their hands-on training, problem-solving skills, and understanding of the scientific method as applied in chemical research. These research projects typically involve interchange and collaboration across all levels of experience and may also involve scientists from other departments and institutions.

Chemistry is often referred to as “the central science” because of its key role in interdisciplinary studies. Correspondingly, a degree in chemistry affords a broad range of employment opportunities. Chemists can direct their talents to specialized problems of applied research, or they can choose to delve into fundamental investigations. A degree in chemistry can cover the spectrum of chemical specialties, from biochemistry to interstellar chemistry. The degree also provides valuable preparation for other professions, such as medicine, dentistry, and law.

The American Chemical Society (http://www.acs.org), with more than 160,000 members, is the major professional society in the United States for practicing chemists. Both undergraduate and graduate students may join the society.

Facilities
The department’s facilities for experimental and theoretical research are modern and extensive. They include diverse major instruments for use by faculty and students, as well as specialized equipment serving individual research groups. Shared instrumentation includes 400- and 600-MHz NMR spectrometers, ultralast laser systems in the Center for Chemical Dynamics, and a cyber-enabled X-ray crystallographic facility.

Other departmental instrumentation includes equipment for laser Raman spectroscopy, GC-MS and LC-MS/MS mass spectrometers, calorimeters, stopped-flow kinetics instrumentation, a circular dichroism spectrometer, an analytical ultracentrifuge, and equipment for electrochemical measurements. Access to very high-field NMR instrumentation is available on campus at the Cleveland Center for Membrane Structural Biology (CCMSB), which is equipped with numerous 500- to 900-MHz NMR spectrometers for solution and solid-state measurements. The chemistry department’s computers are part of the campus-wide fiber optic communications network operated by Information Technology Services, and the entire University Circle area offers wireless access. In addition to the full complement of software, Internet, and library database services
offered by the university, connections to off-site databases, such as SciFinder and Ohio Supercomputer Center, are available to departmental users.

The department uses some of the foremost equipment available in high-resolution nuclear magnetic resonance spectroscopy and in tunable laser spectroscopy. Work on various aspects of chemistry as studied by these techniques is recognized throughout the world.

BS Chemistry (p. 80) | BA Chemistry (p. 81) | BA Chemical Biology (p. 81) | Honors (p. 82) | Teacher Licensure (p. 82) | Minor (p. 82)

Undergraduate Programs

Majors

The Department of Chemistry offers three curricula for undergraduate majors, leading to a Bachelor of Science (BS) degree in chemistry, Bachelor of Arts (BA) degree in chemistry, or Bachelor of Arts (BA) degree in chemical biology.

Bachelor of Science in Chemistry Program

The BS program in chemistry is designed for students who seek professional careers in the chemical sciences and is certified by the American Chemical Society. The BS curriculum provides a rigorous background in chemistry, yet offers considerable flexibility in the senior year in the choice of electives, allowing BS majors to pursue areas of chemistry of particular interest to them in greater depth. At least three units of research (CHEM 397 / CHEM 398) are required, and up to nine units of research may be credited toward the degree.

Total Units Required for Graduation: 120

Chemistry BS - Required Chemistry Courses

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<tr>
<th>First Year</th>
<th>Units</th>
<th>Fall</th>
<th>Spring</th>
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<tr>
<td>Principles of Chemistry I (CHEM 105)</td>
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<td>Principles of Chemistry Laboratory (CHEM 113)</td>
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<td>Principles of Chemistry II (CHEM 106)</td>
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<th>Second Year</th>
<th>Units</th>
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<tr>
<td>Quantitative Analysis Laboratory (CHEM 304)</td>
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<td>Foundations of Analytical Chemistry (CHEM 310)</td>
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<td>Organic Chemistry I (CHEM 323)</td>
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<td>Laboratory Methods in Organic Chemistry (CHEM 322)</td>
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<td>Organic Chemistry II (CHEM 324)</td>
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<th>Third Year</th>
<th>Units</th>
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<tr>
<td>Inorganic Chemistry I (CHEM 311)</td>
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<td>Laboratory Methods in Inorganic Chemistry (CHEM 331)</td>
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<td>Physical Chemistry I (CHEM 335)</td>
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<tr>
<td>Laboratory Methods in Physical Chemistry (CHEM 332)</td>
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Chemistry Elective (300-level, see text below) | 3 |
Year Total: | 9 | 9 |

Fourth Year

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<td>Research Requirement:</td>
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<tr>
<td>Undergraduate Research (CHEM 397)</td>
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<tr>
<td>or Undergraduate Research/Senior Capstone Project (CHEM 398)</td>
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<td>Biochemistry Requirement (one of the following):</td>
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<tr>
<td>Introductory Biochemistry (CHEM 328) (spring, 3 units)</td>
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<td>Chemical Aspects of Living Systems (CHEM 329) (fall, 3 units)</td>
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<td>Introduction to Biochemistry: From Molecules To Medical Science (BIOC 307) (4 units)</td>
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<td>Chemistry Elective (300-level, see text below)</td>
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<td>Technical Electives (see text below)</td>
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Total Units in Sequence: 55-59

Chemistry BS - Additional Required Courses

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<tr>
<td>MATH 121</td>
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<td>or MATH 124</td>
<td>Calculus II</td>
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<tr>
<td>MATH 223</td>
<td>Calculus for Science and Engineering III</td>
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<tr>
<td>or MATH 227</td>
<td>Calculus III</td>
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<tr>
<td>One of the following:</td>
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<tr>
<td>MATH 224</td>
<td>Elementary Differential Equations</td>
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<tr>
<td>MATH 228</td>
<td>Differential Equations</td>
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<tr>
<td>STAT 312</td>
<td>Basic Statistics for Engineering and Science</td>
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<tr>
<td>PHYS 121</td>
<td>General Physics I - Mechanics</td>
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<td>or PHYS 123</td>
<td>Physics and Frontiers I - Mechanics</td>
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<tr>
<td>PHYS 122</td>
<td>General Physics II - Electricity and Magnetism</td>
<td>4</td>
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<tr>
<td>or PHYS 124</td>
<td>Physics and Frontiers II - Electricity and Magnetism</td>
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<tr>
<td>PHYS 221</td>
<td>Introduction to Modern Physics</td>
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</table>

Total Units 25

The chemistry elective may be any chemistry department course at the 300 level or above which is not part of the "core set," or selected courses with a strong chemistry content at the 300 level or above from other science departments. Only three units of CHEM 397 may be applied to a chemistry elective.

The technical electives may be chosen more widely from any of the physical sciences, math, or engineering courses. An additional six units of CHEM 397 may be taken as technical electives. Further additional units of CHEM 397 may be taken as free electives. Students may wish to group their electives into "tracks" of specialization in order to tailor their degree to a particular area of chemistry.

BS majors who plan to go on to graduate study may elect to take advanced courses in:

Inorganic Chemistry

CHEM 412 | Advanced Inorganic Chemistry I
Organic Chemistry

CHEM 421  Advanced Organic Chemistry I
CHEM 422  Advanced Organic Chemistry II
CHEM 435  Synthetic Methods in Organic Chemistry

Physical Chemistry

CHEM 406  Chemical Kinetics
CHEM 407  Chemical Thermodynamics
CHEM 446  Quantum Mechanics I

Students can also elect to take other graduate offerings. Interdisciplinary strengths can be achieved by selecting technical electives in biochemistry, biomedical engineering, chemical engineering, macromolecular science, and materials science as well as in biology, geological sciences, mathematics, physics, and statistics.

Bachelor of Arts in Chemistry Program

The BA program in chemistry is intended for pre-professional students who plan careers in medicine, dentistry, veterinary medicine, pharmacy, or in other fields for which a baccalaureate degree in chemistry provides appropriate training. BA majors may supplement their required courses with additional chemistry courses or may utilize the curriculum’s flexibility to develop an interdisciplinary program of their choice. Many chemistry BA majors participate in undergraduate research within the Department of Chemistry (CHEM 397 / CHEM 398) or in other science departments, including those in the medical school.

Total Units Required for Graduation: 120

Chemistry BA - Required Chemistry Courses

<table>
<thead>
<tr>
<th>First Year</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fall</td>
</tr>
<tr>
<td>Principles of Chemistry I (CHEM 105)</td>
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</tr>
<tr>
<td>Principles of Chemistry Laboratory (CHEM 113)</td>
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<tr>
<td>Principles of Chemistry II (CHEM 106)</td>
<td>3</td>
</tr>
<tr>
<td>Year Total:</td>
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</table>

<table>
<thead>
<tr>
<th>Second Year</th>
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<tbody>
<tr>
<td></td>
<td>Fall</td>
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<tr>
<td>Introductory Organic Chemistry I (CHEM 223)</td>
<td>3</td>
</tr>
<tr>
<td>or Organic Chemistry I (CHEM 323)</td>
<td>2</td>
</tr>
<tr>
<td>Introductory Organic Chemistry Laboratory I (CHEM 233) (see below*)</td>
<td>3</td>
</tr>
<tr>
<td>Introductory Organic Chemistry II (CHEM 224)</td>
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<tr>
<td>or Organic Chemistry II (CHEM 324)</td>
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<tr>
<td>Introductory Organic Chemistry Laboratory II (CHEM 234) (see below*)</td>
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<tr>
<td>or Laboratory Methods in Organic Chemistry (CHEM 322)</td>
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<td>Fall</td>
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<tr>
<td>Introductory Physical Chemistry I (CHEM 301)</td>
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<tr>
<td>or Physical Chemistry I (CHEM 335)</td>
<td>3</td>
</tr>
<tr>
<td>Quantitative Analysis Laboratory (CHEM 304)</td>
<td>2</td>
</tr>
<tr>
<td>Foundations of Analytical Chemistry (CHEM 310)</td>
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</table>

Introductory Physical Chemistry II (CHEM 302) 3
or Physical Chemistry II (CHEM 336) 3
Introductory Physical Chemistry Laboratory (CHEM 305) 3
Year Total: 8 6

Fourth Year

Electives

Year Total:

| Total Units in Sequence: | 38-39 |

* CHEM 322 is offered in spring only, and may be substituted in place of both CHEM 233 and CHEM 234.

Chemistry BA - Additional Required Courses

<p>| | | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>PHYS 115</td>
<td>Introductory Physics I</td>
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<tr>
<td>or PHYS 121</td>
<td>General Physics I - Mechanics</td>
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<tr>
<td>PHYS 116</td>
<td>Introductory Physics II</td>
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<tr>
<td>or PHYS 122</td>
<td>General Physics II - Electricity and Magnetism</td>
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<td>MATH 125</td>
<td>Math and Calculus Applications for Life, Managerial, and Social Sci</td>
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<tr>
<td>or MATH 121</td>
<td>Calculus for Science and Engineering I</td>
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</tr>
<tr>
<td>MATH 126</td>
<td>Math and Calculus Applications for Life, Managerial, and Social Sci II</td>
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</tr>
<tr>
<td>or MATH 122</td>
<td>Calculus for Science and Engineering II</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Units 16

Bachelor of Arts in Chemical Biology Program

The BA program in chemical biology is intended for pre-professional students who plan careers in medicine, dentistry, veterinary medicine, pharmacy, or for individuals seeking careers that utilize chemistry to solve problems affecting living systems. A key component of the major is the flexibility imparted by fewer required courses and the integration of six credit hours of technical electives. Many chemical biology BA majors participate in undergraduate research within the Department of Chemistry (CHEM 397 / CHEM 398) or in other science departments, including those in the medical school.

Total Units Required for Graduation: 120

Chemical Biology BA - Required Chemistry Courses

<table>
<thead>
<tr>
<th>First Year</th>
<th>Units</th>
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<tbody>
<tr>
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<td>Fall</td>
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<tr>
<td>Principles of Chemistry I (CHEM 105)</td>
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<tr>
<td>Principles of Chemistry II (CHEM 106)</td>
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<tr>
<td>Principles of Chemistry Laboratory (CHEM 113)</td>
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<td>Year Total:</td>
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</table>

<table>
<thead>
<tr>
<th>Second Year</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Fall</td>
</tr>
<tr>
<td>Organic Chemistry I (CHEM 323)</td>
<td>3-6</td>
</tr>
<tr>
<td>or CHEM 223 and CHEM 224</td>
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</tbody>
</table>
Introductory Organic Chemistry Laboratory I (CHEM 233) (see below*)
or Laboratory Methods in Organic Chemistry (CHEM 322)

Biochemistry Laboratory (CHEM 306) 3
Introductory Biochemistry (CHEM 328) 3

Year Total: 5-9 6

Third Year

Units

Fall

Introductory Physical Chemistry I (CHEM 301) or Physical Chemistry I (CHEM 335) 3
Quantitative Analysis Laboratory (CHEM 304) 2
Foundations of Analytical Chemistry (CHEM 310) 3

Year Total: 8

Fourth Year

Units

Fall

Technical Electives (see text below) 6
Undergraduate Research/Senior Capstone Project (CHEM 398) 3 - 6

Year Total: 6 3-6

Total Units in Sequence: 42-49

* CHEM 322 is offered in spring only, and may be substituted in place of both CHEM 233 and CHEM 234. Only one semester of organic chemistry laboratory is required for our chemical biology BA program. However, some medical schools require two semesters of organic lab, so students should plan accordingly.

The technical electives may be chosen more widely from any of the physical sciences, math, or engineering courses. A maximum of six units of CHEM 397 may be taken as technical electives. Further additional units of CHEM 397 may be taken as free electives. Students may wish to group their electives into "tracks" of specialization in order to tailor their degree to a particular area of chemistry.

Chemical Biology BA - Additional Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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<tr>
<td>BIOL 214</td>
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<tr>
<td>BIOL 214L</td>
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<td>or PHYS 121</td>
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<tr>
<td>or MATH 122</td>
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</tbody>
</table>

Total Units 24

Other sequences may be followed after consultation with the Department of Chemistry.

Departmental Honors

Chemistry majors who have excellent academic records may participate in the Honors in Chemistry program. To graduate with honors in chemistry, a student must satisfy the following requirements:

1. A combined grade point average of 3.50 in chemistry, physics, and mathematics and an overall grade point average of 3.20
2. A minimum of six units of Undergraduate Research (CHEM 397), or chemical research done under another course number with departmental approval
3. A thesis approved by the department’s undergraduate affairs committee based on the level of research, quality of the manuscript, and chemical content

Teacher Licensure in Chemistry

The chemistry department offers a special option for undergraduate students who wish to pursue a chemistry major and a career in teaching. The Adolescent to Young Adult (AYA) Teacher Education Program in Physical Sciences prepares CWRU students to receive an Ohio Teaching License for grades 7-12. Students declare a second major in education – which involves 34 hours in education and practicum requirements – and complete a planned sequence of chemistry content coursework within the context of the BA chemistry major. The program is designed to offer several unique features not found in other programs and to place students in mentored teaching situations throughout their teacher preparation career. This small, rigorous program is designed to capitalize on the strengths of CWRU’s chemistry department, its Teacher Education Program, and the relationships the university has built with area schools.

Chemistry Minor

Students may complete a minor in chemistry, defined as one year of freshman chemistry (including laboratory); two additional three-unit lecture courses; and two additional laboratory or approved courses. A recommended sequence would include:

Course List

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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<tbody>
<tr>
<td>CHEM 105</td>
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<tr>
<td>CHEM 106</td>
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<td>CHEM 113</td>
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<tr>
<td>or CHEM 323</td>
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<td>CHEM 224</td>
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<tr>
<td>or CHEM 324</td>
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<tr>
<td>CHEM 233</td>
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<tr>
<td>CHEM 234</td>
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</tbody>
</table>

Total Units 18

Other sequences may be followed after consultation with the Department of Chemistry.
BS Chemistry (p. 80) | BA Chemistry (p. 81) | BA Chemical Biology (p. 81) | Honors (p. 82) | Teacher Licensure (p. 82) | Minor (p. 82)

Graduate Programs

Master of Science Programs

The MS degree in chemistry may be obtained by completing (1) a program that includes the preparation of a master’s thesis, or (2) a program involving only course work. Both programs require a minimum of 27 units, of which up to six units may be for the master’s thesis. Course work for the master’s degree may be taken on a part-time basis, but thesis research can be undertaken only by full-time graduate students. Thus, only the master’s degree without thesis can be earned entirely on a part-time basis.

The Science and Technology Entrepreneurship Program (STEP) is a three- or four-semester professional MS degree offered in chemistry as well as in biotechnology and physics. Students enter the Chemistry Entrepreneurship program with a bachelor’s, master’s, or doctoral degree in a chemistry-related field. The program consists of advanced courses in chemistry, business, and technology innovation and an entrepreneurial project with technical content in an existing company or new venture.

Doctor of Philosophy Program

The PhD degree in chemistry is granted to those students who have shown an extensive knowledge of advanced chemistry and the ability to do original research. The program usually requires four years of full-time study after the bachelor’s degree. Besides advanced courses, the program consists of cumulative and oral examinations, seminars and colloquia, and an original research project. At least twelve months must be spent in residence on campus while fulfilling the PhD thesis research requirement.

Full-time graduate students who maintain satisfactory academic performance while pursuing the PhD degree in chemistry normally receive a stipend for teaching and/or research, which includes full tuition and a monthly amount sufficient to cover living expenses.

Research

The Department of Chemistry is noted for research programs in (1) chemical biology and (2) energy and materials. Projects range from synthetic studies of important bioactive substances, including antibiotics and DNA-binding substances, to detailed examination of the surface properties of materials used in batteries and electrolytic cells. Studies are being performed with molecules as simple as oxygen and as complicated as those which describe the active centers of enzymes or the protein core of insoluble aggregates that deposit in neurodegenerative disease. Efforts are being made to understand the basic chemical properties leading to reactive mediators generated from physiological lipids.

Other research is aimed at developing new drugs for photodynamic therapy and at understanding the mechanism of action of drugs for antiretroviral therapy. The influence of metal ions in modifying reactivity is a common interest of several members of the faculty, as is the development of organometallic compounds for materials and catalysis. Chemical surfaces are being studied, as are various applications of nanoparticles, from cells to the environment. Studies designed to characterize electrode-electrolyte interfaces, the electrochemical properties of new semiconductors, and single-cell microelectrodes are also ongoing. These efforts are complemented by theoretical studies on the interfacial structure and bonding of composite materials.

Case Western Reserve University ranks among the leading universities internationally in its strengths in electrochemistry and has brought these strengths together in the Yeager Center for Electrochemical Studies (YCES) (http://chemistry.case.edu/departments/research/yces). The interdisciplinary nature of electrochemistry involves the interaction of electrochemists in the chemistry and chemical engineering departments with metallurgists, surface physicists, inorganic and organic chemists, polymer membrane chemists, and electrical engineers. Such interactions, lacking on most campuses, are promoted at Case Western Reserve University through YCES. Graduate students in the chemistry department have the opportunity to specialize in electrochemistry in one of the most extensive course and research programs in the United States.

Colloquia and Seminars

The department sponsors a rich program of colloquia and seminars on recent advances in chemical research. Most notable among these is the Frontiers in Chemistry Lecture Series, in which scientists of international distinction lecture on major discoveries and developments in chemistry. In addition, a weekly colloquium series provides lectures by invited speakers in a variety of fields of chemical investigation. Both of these programs are addressed to an audience of faculty, graduate students, and other chemical scientists in the university and the Cleveland area, and are a vital means to broaden current knowledge. Numerous other seminars and meetings are held on a more specialized and informal level. Most individual research groups conduct weekly discussions to evaluate their progress.

Primary Faculty

Mary D. Barkley, PhD
(University of California, San Diego)
M. Roger Clapp University Professor of Arts and Sciences; Chair
Analytical Chemistry, Biochemistry, Biophysical Chemistry, Medicinal Chemistry, Photochemistry, Physical Chemistry, Theoretical Chemistry

Alfred B. Anderson, PhD
(Johns Hopkins University)
Professor
Materials, Physical Chemistry, Electrocatalysis, Interfacial Phenomena, Catalysis, Theoretical Chemistry

Clemens Burda, PhD
(University of Basel, Switzerland)
Chemical Professor
Photochemistry, Materials, Physical Chemistry, Nanochemistry, Bio- and Energy Applications, Biophysical and Biomedical Science and Engineering, Spectroscopy

James D. Burgess, PhD
(Virginia Commonwealth University)
Associate Professor
Analytical Chemistry, Biochemistry, Biophysical Chemistry, Materials, Medicinal Chemistry, Bio-Inorganic Chemistry, Electrochemistry
Carlos E. Crespo-Hernández, PhD  
(Undergraduate of Puerto Rico)  
Associate Professor  

Thomas G. Gray, PhD  
(Harvard University)  
Associate Professor  
Organometallic Chemistry, Inorganic Chemistry, Energy

Malcolm E. Kenney, PhD  
(Cornell University)  
Hurlbut Professor of Chemistry  

Irene Lee, PhD  
(Pennsylvania State University)  
Professor  
Biochemistry, Medicinal Chemistry, Bio-Organic Chemistry

Drew A. Meyer, PhD  
(Stanford University)  
John Teagle Professorial Fellow in Chemistry; Instructor  
Physical Chemistry, Inorganic Chemistry, X-Ray Spectroscopy, Chemical Education

Anthony J. Pearson, PhD  
(University of Aston, Birmingham, England)  
Rudolph and Susan Rense Professor of Chemistry  
Organic Chemistry, Organometallic Chemistry, Catalysis, Natural Products, Synthesis

Emily Pentzer, PhD  
(Northernwestern University)  
Assistant Professor  
Organic Chemistry, Materials & Energy, Polymers, Nanostructures, Self-Assembly, Composites

John D. Protasiewicz, PhD  
(Cornell University)  
Professor; Associate Chair  

Robert G. Salomon, PhD  
(Undergraduate of Wisconsin, Madison)  
Charles Frederic Mabery Professor of Research in Chemistry  
Biochemistry, Chemical Biology, Medicinal Chemistry, Organic Chemistry, Bio-Organic Chemistry, Cellular Biology, Molecular Biology, Natural Products, Pharmacology, Synthesis

Anna C. Samia, PhD  
(Georgia Institute of Technology)  
Assistant Professor  

Geneviève Sauvé, PhD  
(California Institute of Technology)  
Frank Hovorka Associate Professor in Chemistry  

Daniel A. Scherson, PhD  
(University of California, Davis)  
Frank Hovorka Professor of Chemistry  
Analytical Chemistry, Materials, Physical Chemistry, Photochemistry, Electrochemistry

Rekha R. Srinivasan, PhD  
(Case Western Reserve University)  
Senior Instructor  
Analytical Chemistry, Biophysical Chemistry, Organic Chemistry, Chemical Education

Gregory P. Tochtrop, PhD  
(Washington University Medical School)  
Associate Professor  

Blanton S. Tolbert, PhD  
(University of Rochester)  
Associate Professor  
Biochemistry, Biophysical Chemistry, Structural Biology

Rajesh Viswanathan, PhD  
(University of Indiana)  
Assistant Professor  
Organic Chemistry, Protein Biochemistry, Chemical Biology, Chemical Synthesis and Characterization, Genetically-Encoded Natural Products, Molecular Biology, Microbial Genetics, Bioinformatics, Metabolic Pathways, Drug Discovery

Michael G. Zagorski, PhD  
(Case Western Reserve University)  
Professor  

Lecturers

Kenneth V. Adair, PhD  
(Undergraduate of Oregon)  
Full-time Lecturer  
Water Quality Analysis, Fluorescence Correlation Spectroscopy, Chemical Dynamics

Raul E. Juarez Hernandez, PhD  
(University of Notre Dame)  
Full-time Lecturer  
Organic Chemistry, Chemical Education
Research Faculty

Mikhail D. Linetsky, PhD  
(Academy of Science of Ukraine)  
*Research Associate Professor*  
Biochemistry, Chemical Biology, Protein Chemistry, Post-Translational Protein Modification, Proteomics

Secondary Faculty

Paul Carey, PhD  
(University of Sussex, UK)  
*Professor, Department of Biochemistry*  
Biochemistry, Biophysical Chemistry, Microscopy / Imaging, Spectroscopy

John W. Crabb, PhD  
(University of Kansas Medical Center)  
*Professor, Department of Cell Biology, Lerner Research Institute, Cleveland Clinic*  
Proteomics of the visual cycle and age-related ocular diseases

Chris Dealwis, PhD  
*Associate Professor, Department of Pharmacology*  
Biochemistry, Biophysics, Enzyme Catalysis, Pharmacology, Proteins

Thomas Gerken, PhD  
(Case Western Reserve University)  
*Professor, Division of Pediatric Pulmonology*  
Biochemistry, Biophysical Chemistry, Chemical Biology, Glycosylation, Protein Chemistry, Protein Structure

Thomas Kelley, PhD  
(University of Notre Dame)  
*Associate Professor, Division of Pediatric Pulmonology*  
Biochemistry, Medicinal Chemistry, Cellular Biology, Pharmacology

Zheng-Rong Lu, PhD  
*M. Frank and Margaret Domiter Rudy Professor, Department of Biomedical Engineering*  
Drug Delivery, Molecular Imaging, Nanotechnology

John J. Mieyal, PhD  
(Case Western Reserve University)  
*Professor and Vice Chair, Department of Pharmacology*  
Biochemistry, Chemical Biology, Medicinal Chemistry, Bio-Organic Chemistry, Catalysis, Cellular Biology, Molecular Biology, Neurochemistry, Pharmacology

David Schiraldi, PhD  
(University of Oregon)  
*Professor, Department of Macromolecular Science & Engineering*  
Polymer synthesis and structure-property relationships, Condensation polymers, Polymer nanocomposites, Fuel cell durability, Polymerization catalysis, Transport phenomena and packaging applications, Polymer blends and complex polymer systems.

Adjunct Faculty

Ormond Brathwaite, PhD  
(City University of New York)  
*Adjunct Associate Professor*  
Biochemistry

Michael J. Kenney, PhD  
(Iowa State University)  
*Adjunct Associate Professor*  
Analytical Chemistry, Physical Chemistry, Chemical Education, Computer Programming, Application Development

M. Cather Simpson, PhD  
(University of New Mexico)  
*Adjunct Associate Professor*  
Biophysical chemistry; spectroscopic studies of biologically significant processes

Emeritus Faculty

Robert C. Dunbar, PhD  
(Stanford University)  
*Professor Emeritus of Chemistry*  

Gheorghe D. Mateescu, PhD  
(Case Western Reserve University)  
*Professor Emeritus of Chemistry*  
Analytical Chemistry, Physical Chemistry
Courses

CHEM 105. Principles of Chemistry I. 3 Units.
Atomic structure; thermochemistry; periodicity, bonding and molecular structure; intermolecular forces; properties of solids; liquids, gases and solutions. Recommended preparation: One year of high school chemistry.

CHEM 106. Principles of Chemistry II. 3 Units.
Thermodynamics, chemical equilibrium; acid/base chemistry; oxidation and reduction; kinetics; spectroscopy; introduction to nuclear, organic, inorganic, and polymer chemistry. Prereq: CHEM 105.

CHEM 111. Principles of Chemistry for Engineers. 4 Units.
A first course in university chemistry emphasizing chemistry of materials for engineering students. Atomic theory and quantitative relationships; gas laws and kinetic theory; solutions, acid-base properties and pH; thermodynamics and equilibrium; kinetics, catalysis, and mechanisms; molecular structure and bonding. Recommended preparation: One year of high school chemistry.

CHEM 113. Principles of Chemistry Laboratory. 2 Units.
A one semester laboratory based on quantitative chemical measurements. Experiments include analysis, synthesis and characterization, thermochemistry and chemical kinetics. Computer analysis of data is a key part of all experiments. Prereq or Coreq: CHEM 105 or CHEM 106 or CHEM 111 or ENGR 145.

CHEM 114. Chemistry Frontiers Laboratory. 2 Units.
An introduction to laboratory techniques and computer-based methods for chemical research for the chemistry major. Scientific information databases, structural chemistry, experimental design and data handling, chemical synthesis and characterization. Prereq: CHEM 105 or CHEM 106 or CHEM 111 and CHEM 113. Coreq: CHEM 106.

CHEM 119. Concepts for a Molecular View of Biology I. 3 Units.
The first semester of a two-course sequence in elementary inorganic, organic, and biochemistry, intended for nursing students or non-majors. Topics include: atomic theory, the periodic table, chemical bonds, molecular geometry, ideal gas laws, equilibrium and reaction rates, acids and bases, nuclear chemistry, and nomenclature and reactions of organic compounds (including alkyl, aryl, alcohol, carbonyl, and amino compounds). Problems involving numeric computation are emphasized. This course is not open to students with credit for CHEM 105 or CHEM 111.

CHEM 121. Concepts for a Molecular View of Biology II. 3 Units.
The second course of a two-semester sequence in elementary inorganic, organic, and biochemistry, intended for nursing students or non-majors. Topics include: carbohydrates, lipids, proteins, enzyme kinetics, metabolic pathways and bioenergetics, DNA and RNA, methods of molecular biology, and nutrition. Applications to human physiology and medicine emphasized. This course is not open to students with credit for CHEM 223 or CHEM 323. Prereq: CHEM 119.

CHEM 223. Introductory Organic Chemistry I. 3 Units.
Introductory course for science majors and engineering students. Develops themes of structure and bonding along with elementary reaction mechanisms. Includes treatment of hydrocarbons, alkyl halides, alcohols, and ethers as well as an introduction to spectroscopy. Prereq: CHEM 106 or CHEM 111.

CHEM 224. Introductory Organic Chemistry II. 3 Units.
Continues and extends themes of structure and bonding from CHEM 223 and continues spectroscopy and more complex reaction mechanisms. Includes treatment of aromatic rings, carbonyl compounds, amines, and selected special topics. Prereq: CHEM 223 or CHEM 323.

CHEM 233. Introductory Organic Chemistry Laboratory I. 2 Units.
An introductory organic laboratory course emphasizing microscale operations. Synthesis and purification of organic compounds, isolation of natural products, and systematic identification of organic compounds by physical and chemical methods. Prereq: (CHEM 106 or CHEM 111) and CHEM 113. Coreq: CHEM 223 or CHEM 323.

CHEM 290. Chemical Laboratory Methods for Engineers. 3 Units.
Techniques of chemical synthesis, analysis, and characterization. Uses students' backgrounds in general and organic chemistry, but requires no background in chemical laboratory operations. Prereq or Coreq: CHEM 223 or CHEM 323.

CHEM 301. Introductory Physical Chemistry I. 3 Units.
First of a two-semester sequence covering principles and applications of physical chemistry, intended for chemistry and engineering majors and other students having primary interests in biochemical, biological or life-science areas. States and properties of matter. Thermodynamics and its application to chemical and biochemical systems. Chemical equilibrium. Electrochemistry. Recommended preparation: One year each of undergraduate physics and calculus, preferably including partial derivatives. Prereq: CHEM 106.

CHEM 302. Introductory Physical Chemistry II. 3 Units.

CHEM 304. Quantitative Analysis Laboratory. 2 Units.
A one-semester laboratory course providing practical experience in the analytical process. Focus is on statistical error analysis of measurements, method validation and instrument calibration, and reporting. Basic laboratory skills are developed and evaluated based on accuracy and precision of measurements. Experiments using titration, spectroscopy, electrochemistry, liquid and gas chromatography, and mass spectrometry are conducted. Prereq: CHEM 106 and CHEM 113. Coreq: CHEM 310.
CHEM 305. Introductory Physical Chemistry Laboratory. 3 Units.
A one-semester laboratory course focusing on the principles and quantitative characterization of chemical and biochemical systems. Experiments include chemical equilibrium kinetics, electrochemistry, spectroscopy and the use of computers for the statistical analysis of experimental data. Seminar discussions and disciplinary writing of results. Counts as SAGES Departmental Seminar. Prereq: CHEM 301 and CHEM 304 or CHEM 335. Or Prereq or Coreq: CHEM 302 or CHEM 336.

CHEM 306. Biochemistry Laboratory. 3 Units.
A one semester laboratory and lecture course developed to introduce students to a variety of chemical biology laboratory themes including buffering, identification of amino acids, immunoassay, ligand binding, cellular fractionation, enzyme isolation and purification, proteomics, and enzyme kinetics. Techniques include titration, various forms of chromatography, colorimetric assays, electrophoresis, high performance liquid chromatography and liquid chromatography coupled with tandem mass spectrometry. Recommended preparation: CHEM 428. Counts as SAGES Departmental Seminar. Prereq: CHEM 233.

CHEM 310. Foundations of Analytical Chemistry. 3 Units.
A one-semester lecture covering classical and modern aspects of the analytical process; analysis requirements, method selection including capabilities and limitations, sampling and sample processing, measurement data statistics for evaluation of precision and accuracy, method validation, and reporting. Fundamental concepts in equilibrium thermodynamics are covered in the context of chemical analysis. Methods based on titration, spectroscopy, electrochemistry, chromatography, and mass spectrometry are emphasized. Prereq: CHEM 106 and CHEM 113. Coreq: CHEM 301.

CHEM 311. Inorganic Chemistry I. 3 Units.
Fundamentals of inorganic chemistry. Topics include molecular structure, molecular shape and symmetry, structure of solids, d-metal complexes, oxidation and reduction, and acids and bases. Prereq or Coreq: CHEM 301 or CHEM 335.

CHEM 316. Frontiers of Inorganic Chemistry. 3 Units.
This course deals with five topics in inorganic chemistry of current interest. The topics are: ways in which inorganic chemistry can increase the quality of the environment, methods by which inorganic chemistry can lead to sustainable processes in a developed industrial society, advances in bioinorganic and medicinal inorganic chemistry of clinical importance, modern inorganic materials with unusual and valuable property sets, and representative industrial inorganic research and production processes. It is to be team taught. Offered as CHEM 316 and CHEM 416.

CHEM 322. Laboratory Methods in Organic Chemistry. 3 Units.
Experimental approach to the synthesis, purification and characterization of organic compounds. Nuclear magnetic resonance (NMR) and infrared (IR) spectroscopies; chromatographic techniques. Prereq: CHEM 304 and CHEM 223 or CHEM 323. Prereq or Coreq: CHEM 224 or CHEM 324.

CHEM 323. Organic Chemistry I. 3 Units.
Relationships between molecular structure and chemical reactivity and development of sophisticated problem-solving skills in the context of organic reaction mechanisms and multi-step synthesis. Homolytic and heterolytic substitution, elimination, oxidation and reduction reactions; topics in stereochemistry and spectroscopy. Recommended for chemistry, biochemistry, and related majors. Prereq: CHEM 106.

CHEM 324. Organic Chemistry II. 3 Units.
Continuation of CHEM 323. Introduces the chemistry of carbonyl, aromatic and amino functional groups, and develops the concepts of conjugation and resonance, molecular orbital theory and pericyclic reactions. Prereq: CHEM 223 or CHEM 323.

CHEM 325. Physical Methods for Determining Organic Structure. 3 Units.
Structure determination of organic compounds using mass spectrometry and modern instrumental techniques such as infrared, ultraviolet, visible, and nuclear magnetic resonance spectroscopy. Recommended preparation: Two semesters of undergraduate organic chemistry. Offered as CHEM 325 and CHEM 425.

CHEM 328. Introductory Biochemistry. 3 Units.
A survey of biochemistry with a strong emphasis on the chemical logic underlying metabolic pathways and the evolution of biomolecules. Cellular architecture. Amino acids and protein structure, purification, analysis, and synthesis. DNA, RNA, the flow of genetic information, and molecular biological technology. Enzyme kinetics, catalytic, and regulatory strategies. Sugars, complex carbohydrates, and glycoproteins. Lipids and cell membranes. Glycolysis, gluconeogenesis, carbon fixation through the "dark reactions" of photosynthesis, aerobic catabolism through the citric acid cycle, and glycogen metabolism. Biosynthesis and degradation of fatty acids, amino acids, and proteins. Offered as CHEM 328 and CHEM 428. Prereq: CHEM 224 or CHEM 324.

CHEM 329. Chemical Aspects of Living Systems. 3 Units.

CHEM 331. Laboratory Methods in Inorganic Chemistry. 3 Units.
Synthesis, separation techniques, physical properties, and analysis. Advanced techniques of chemical synthesis, leading the student to the preparation of interesting inorganic and organometallic compounds. Offered as: CHEM 331 and CHEM 431. Prereq: CHEM 322.

CHEM 332. Laboratory Methods in Physical Chemistry. 3 Units.

CHEM 333. Medicinal Chemistry and Drug Development. 3 Units.
This course provides an overview on how principles in chemistry and biology are integrated to facilitate drug development. Primary emphasis will be placed on the development of organic molecules as drugs and metabolic enzymes as drug targets. Subjects pertinent to the introduction of medicinal chemistry, evaluation of drug efficacies in vitro and in vivo, and drug metabolism will be covered. Offered as CHEM 333 and CHEM 433. Prereq: CHEM 223 or CHEM 323 and BIOL 215. Coreq: CHEM 224 or CHEM 324.
CHEM 335. Physical Chemistry I. 3 Units.

CHEM 336. Physical Chemistry II. 3 Units.

CHEM 337. Quantum Mechanics I. 3 Units.
Introduction to quantization, measurement and the Schrödinger equation; angular momentum and states of molecules. Perturbation theory, spectroscopy and chemical bonding. Variational theory and calculations of molecular properties. Offered as CHEM 335 and CHEM 446. Prereq: CHEM 336.

CHEM 339. Bioinorganic Chemistry. 3 Units.
An introduction to metal ions in biology and medicine. Topics of emphasis include metalloenzymes, inorganic elements in pharmaceuticals, and physical methods of characterization in biology. Course material will be presented through a seminar format, and will involve extensive class participation, student presentations, and literature research reports. Offered as CHEM 339 and CHEM 439. Prereq: CHEM 224 or CHEM 324.

CHEM 340. Solar Energy Conversion. 3 Units.
This is a multidisciplinary course from a chemist's point of view. This course teaches the background necessary to read and understand the scientific literature on solar energy conversion, and includes some basic device physics, materials chemistry and chemistry. Topics provide an overview of the field and includes: Global energy perspective, principles of photovoltaics, crystalline solar cells, thin-film solar cells, dye-sensitized solar cells, organic solar cells (with emphasis on polymer-based solar cells), photoelectrochemical cells and artificial photosynthesis for fuel production, and semiconductor nanostructures and quantum dots for solar energy conversion. The course includes three laboratories and a demo using state-of-the-art equipment, as well as presentations of recent research articles by the graduate students. It is recommended that students have experience with thermodynamics. The following CWRU courses would meet this expectation: CHEM 301, CHEM 335, ENGR 225 or PHYS 313. Offered as CHEM 340 and CHEM 440. Prereq: CHEM 106 or ENGR 145.

CHEM 341. Functional Nanomaterials. 3 Units.
This course is designed to introduce important concepts on the fundamental physical and chemical properties of technologically important nanometer scale materials. The course will cover an overview of the scientific principles pertaining to new properties at the nanoscale; synthesis and characterization tools; and existing and emerging applications of nanomaterials. It will center on current research developments on major classes of functional nanomaterials, including plasmonic nanoparticles, quantum dots, nanomagnets, carbon nanotubes, nanocatalysts and hybrid inorganic/organic nanostructures. In addition an emphasis will be placed on understanding the broader societal, economical and environmental impact of the scientific and technological advances brought forward by nanotechnology. Offered as CHEM 341 and CHEM 441.

CHEM 342. Computational Chemistry. 3 Units.
An introduction to computational methods in electronic structure. Molecular mechanics, semiempirical molecular orbital calculations, ab initio, post Hartree-Fock, density-functional theories, and hybrid approaches will be addressed. Continuum solvation calculations will be considered, time permitting. Offered as CHEM 342 and CHEM 442. Prereq: CHEM 223 or CHEM 323.

CHEM 344. The Chemistry and Physics of Energy Storage. 3 Units.
This course will cover both scientific and economic aspects of the operation of energy storage devices currently being considered for both small and large scale applications ranging from portable electronics to the electrical grid. These devices include pumped hydro, flywheel, compressed air, batteries, supercapacitors, thermal conversion, regenerative fuel cells and redox flow cells. Not to be included in this course are energy conversion devices such as photovoltaics and windmills. This course would be of interest to both undergraduate and graduate students with interest in the general area of energy management and will cover the physics and chemistry principles associated with the various modes of storage. Students either individually or in small groups will be expected to prepare a written document at the end of the course that describes and summarizes each mode of storage, including a discussion of all aspects of the technology such as costs of installation and operation, environmental impact, and economic projections. As part of this exercise students will become familiar with the extraordinary resources offered by our library. Offered as CHEM 344 and CHEM 444. Prereq: CHEM 106.

CHEM 395. Chemistry Colloquium Series. 1 Unit.
Course content provided by Thursday chemistry department colloquia (or Frontiers in Chemistry lectures). Discussion sessions review previous lectures and lay foundation for forthcoming lectures.

CHEM 397. Undergraduate Research. 1 - 6 Unit.
Independent research project within a research group in the chemistry department or, by petition, within a research group in another Case department. Arrangements should be made with the faculty member selected. Open to all chemistry majors and other qualified students; required for Honors in Chemistry. A written report is required each semester.

CHEM 398. Undergraduate Research/Senior Capstone Project. 3 - 6 Units.
Independent research project within a research group in the chemistry department or, by petition, within a research group in another Case department. Arrangements should be made by consultation with the faculty member selected and the Senior Capstone Committee of the chemistry department. Open to all chemistry majors and other qualified students. Satisfies the research requirement for Honors in Chemistry. A written report is required each semester.

CHEM 406. Chemical Kinetics. 3 Units.
Theory and characterization of chemical rate processes. Recommended preparation: Two semesters of undergraduate physical chemistry.

CHEM 407. Chemical Thermodynamics. 3 Units.
Thermodynamics and statistical thermodynamics and their application to chemical problems. Recommended preparation: Two semesters of undergraduate physical chemistry.
CHEM 408. Advanced Physical Chemistry. 3 Units.
Topics in physical chemistry, intended for entering graduate students, giving background tools appropriate for graduate research in areas of chemistry other than physical chemistry. Illustrations from the contemporary chemical research literature will be emphasized. Thermodynamics and statistical mechanics, quantum chemistry and computation, spectroscopy, and chemical kinetics and dynamics. Recommended preparation: One year of undergraduate physical chemistry.

CHEM 412. Advanced Inorganic Chemistry I. 3 Units.
Chemistry of inorganic systems. Spectroscopy, magnetism, and stereochemistry of transition metal compounds. Recommended preparation: One semester of undergraduate inorganic chemistry and two semesters of undergraduate physical chemistry.

CHEM 414. Organometallic Reactions and Structures. 3 Units.
Bonding, structure, and mechanistic aspects of organometallic chemistry and the relevance of organometallic species to chemical catalysis. Recommended preparation: One semester of undergraduate inorganic chemistry.

CHEM 416. Frontiers of Inorganic Chemistry. 3 Units.
This course deals with five topics in inorganic chemistry of current interest. The topics are: ways in which inorganic chemistry can increase the quality of the environment, methods by which inorganic chemistry can lead to sustainable processes in a developed industrial society, advances in bioinorganic and medicinal inorganic chemistry of clinical importance, modern inorganic materials with unusual and valuable property sets, and representative industrial inorganic research and production processes. It is to be team taught. Offered as CHEM 316 and CHEM 416.

CHEM 421. Advanced Organic Chemistry I. 3 Units.

CHEM 422. Advanced Organic Chemistry II. 3 Units.

CHEM 425. Physical Methods for Determining Organic Structure. 3 Units.
Structure determination of organic compounds using mass spectrometry and modern instrumental techniques such as infrared, ultraviolet, visible, and nuclear magnetic resonance spectroscopy. Recommended preparation: Two semesters of undergraduate organic chemistry. Offered as CHEM 325 and CHEM 425.

CHEM 428. Introductory Biochemistry. 3 Units.
A survey of biochemistry with a strong emphasis on the chemical logic underlying metabolic pathways and the evolution of biomolecules. Cellular architecture. Amino acids and protein structure, purification, analysis, and synthesis. DNA, RNA, the flow of genetic information, and molecular biological technology. Enzyme kinetics, catalytic, and regulatory strategies. Sugars, complex carbohydrates, and glycoproteins. Lipids and cell membranes. Glycolysis, gluconeogenesis, carbon fixation through the "dark reactions" of photosynthesis, aerobic catabolism through the citric acid cycle, and glycolgen metabolism. Biosynthesis and degradation of fatty acids, amino acids, and proteins. Offered as CHEM 328 and CHEM 428.

CHEM 429. Chemical Aspects of Living Systems. 3 Units.

CHEM 430. Advanced Methods in Structural Biology. 1 - 6 Unit.
The course is designed for graduate students who will be focusing on one or more methods of structural biology in their thesis project. This course is divided into 3-6 sections (depending on demand). The topics offered will include X-ray crystallography, nuclear magnetic resonance spectroscopy, optical spectroscopy, mass spectrometry, cryo-electron microscopy, and computational and design methods. Students can select one or more modules. Modules will be scheduled so that students can take all the offered modules in one semester. Each section is given in 5 weeks and is worth 1 credit. Each section covers one area of structural biology at an advanced level such that the student is prepared for graduate level research in that topic. Offered as BIOC 430, CHEM 430, PHOL 430, and PHRM 430.

CHEM 431. Laboratory Methods in Inorganic Chemistry. 3 Units.
Synthesis, separation techniques, physical properties, and analysis. Advanced techniques of chemical synthesis, leading the student to the preparation of interesting inorganic and organometallic compounds. Offered as: CHEM 331 and CHEM 431. Prereq: CHEM 322.

CHEM 433. Medicinal Chemistry and Drug Development. 3 Units.
This course provides an overview on how principles in chemistry and biology are integrated to facilitate drug development. Primary emphasis will be placed on the development of organic molecules as drugs and metabolic enzymes as drug targets. Subjects pertinent to the introduction of medicinal chemistry, evaluation of drug efficacies in vitro and in vivo, and drug metabolism will be covered. Offered as CHEM 333 and CHEM 433.

CHEM 435. Synthetic Methods in Organic Chemistry. 3 Units.

CHEM 436. Complex Molecular Synthesis. 3 Units.
An advanced organic chemistry course providing students with an in-depth examination of the art of total synthesis drawing from both classical and recent examples. Recommended preparation: Two semesters of undergraduate organic chemistry.

CHEM 439. Bioinorganic Chemistry. 3 Units.
An introduction to metal ions in biology and medicine. Topics of emphasis include metalloenzymes, inorganic elements in pharmaceuticals, and physical methods of characterization in biology. Course material will be presented through a seminar format, and will involve extensive class participation, student presentations, and literature research reports. Offered as CHEM 339 and CHEM 439. Prereq: Graduate standing.
CHEM 440. Solar Energy Conversion. 3 Units.
This is a multidisciplinary course from a chemist's point of view. This course teaches the background necessary to read and understand the scientific literature on solar energy conversion, and includes some basic device physics, materials chemistry and chemistry. Topics provide an overview of the field and includes: Global energy perspective, principles of photovoltaics, crystalline solar cells, thin-film solar cells, dye-sensitized solar cells, organic solar cells (with emphasis on polymer-based solar cells), photoelectrochemical cells and artificial photosynthesis for fuel production, and semiconductor nanostructures and quantum dots for solar energy conversion. The course includes three laboratories and a demo using state-of-the-art equipment, as well as presentations of recent research articles by the graduate students. It is recommended that students have experience with thermodynamics. The following CWRU courses would meet this expectation: CHEM 301, CHEM 335, ENGR 225 or PHYS 313. Offered as CHEM 340 and CHEM 440.

CHEM 441. Functional Nanomaterials. 3 Units.
This course is designed to introduce important concepts on the fundamental physical and chemical properties of technologically important nanometer scale materials. The course will cover an overview of the scientific principles pertaining to new properties at the nanoscale; synthesis and characterization tools; and existing and emerging applications of nanomaterials. It will center on current research developments on major classes of functional nanomaterials, including plasmonic nanoparticles, quantum dots, nanomagnets, carbon nanotubes, nanocatalysts and hybrid inorganic/organic nanostructures. In addition an emphasis will be placed on understanding the broader societal, economical and environmental impact of the scientific and technological advances brought forward by nanotechnology. Offered as CHEM 341 and CHEM 441.

CHEM 442. Computational Chemistry. 3 Units.
An introduction to computational methods in electronic structure. Molecular mechanics, semiempirical molecular orbital calculations, ab initio, post Hartree-Fock, density-functional theories, and hybrid approaches will be addressed. Continuum solvation calculations will be considered, time permitting. Offered as CHEM 342 and CHEM 442. Prereq: CHEM 223 or CHEM 323.

CHEM 444. The Chemistry and Physics of Energy Storage. 3 Units.
This course will cover both scientific and economic aspects of the operation of energy storage devices currently being considered for both small and large scale applications ranging from portable electronics to the electrical grid. These devices include pumped hydro, flywheel, compressed air, batteries, supercapacitors, thermal conversion, regenerative fuel cells and redox flow cells. Not to be included in this course are energy conversion devices such as photovoltaics and windmills. This course would be of interest to both undergraduate and graduate students with interest in the general area of energy management and will cover the physics and chemistry principles associated with the various modes of storage. Students either individually or in small groups will be expected to prepare a written document at the end of the course that describes and summarizes each mode of storage, including a discussion of all aspects of the technology such as costs of installation and operation, environmental impact, and economic projections. As part of this exercise students will become familiar with the extraordinary resources offered by our library. Offered as CHEM 344 and CHEM 444. Prereq: CHEM 106.

CHEM 445. Electrochemistry I. 3 Units.
Electrochemical properties and processes of electrode/electrolyte interfaces. Fundamental background for work in corrosion, electrodeposition, industrial electrolysis, electro-organic synthesis, batteries, fuel cells, and photoelectrochemical energy conversion. Recommended preparation: One semester of undergraduate physical chemistry.

CHEM 446. Quantum Mechanics I. 3 Units.
Introduction of quantization, measurement and the Schrodinger equation; angular momentum and states of molecules. Perturbation theory, spectroscopy and chemical bonding. Variational theory and calculations of molecular properties. Recommended preparation: Two semesters of undergraduate physical chemistry. Offered as CHEM 335 and CHEM 446.

CHEM 447. Quantum Mechanics II. 3 Units.
Continuation of CHEM 446. Ab initio and semi-empirical methods, configuration interactions, time dependent phenomena, and introduction to band theory of solids. Prereq: CHEM 446.

CHEM 450. Molecular Spectroscopy. 3 Units.
Translation, rotation, vibration, and electronic transitions of molecules. Prereq: CHEM 446.

CHEM 475. Protein Biophysics. 3 Units.
This course focuses on in-depth understanding of the molecular biophysics of proteins. Structural, thermodynamic and kinetic aspects of protein function and structure-function relationships will be considered at the advanced conceptual level. The application of these theoretical frameworks will be illustrated with examples from the literature and integration of biophysical knowledge with description at the cellular and systems level. The format consists of lectures, problem sets, and student presentations. A special emphasis will be placed on discussion of original publications. Offered as BIOC 475, CHEM 475, PHOL 475, PHRM 475, and NEUR 475.

CHEM 491. Modern Chemistry for Innovation I. 3 Units.
The first half of a two-semester sequence providing an understanding of chemistry as a basis for successfully launching new high-tech ventures. The course will examine physical limitations to present technologies and the use of chemistry to identify potential opportunities for new venture creation. The course will provide experience in using chemistry for both identification of incremental improvements and as the basis for alternative technologies. Case studies will be used to illustrate recent commercially successful (and unsuccessful) venture creation and will illustrate characteristics for success.

CHEM 493. Feasibility and Technology Analysis. 3 Units.
This course provides the tools scientists need to determine whether a technology is ready for commercialization. These tools include (but are not limited to): financial analysis, market analysis, industry analysis, technology analysis, intellectual property protection, the entrepreneurial process and culture, an introduction to entrepreneurial strategy and new venture financing. Deliverables will include a technology feasibility analysis on a possible application in the student's scientific area. Offered as BIOL 493, CHEM 493, and PHYS 493.

CHEM 501. Special Topics in Inorganic Chemistry. 1 - 6 Unit.
(Credit as arranged.) Lectures on advanced topics in inorganic chemistry presented by staff or visiting lecturers. Course title, content, and credit change from year to year.
CHEM 502. Special Topics in Inorganic Chemistry. 1 - 6 Unit. (Credit as arranged.) Lectures on advanced topics in inorganic chemistry presented by staff or visiting lecturers. Course title, content, and credit change from year to year.

CHEM 504. Special Topics in Organic Chemistry. 1 - 6 Unit. (Credit as arranged.) Lectures on advanced topics in organic chemistry presented by staff or visiting lecturers. Course title, content, and credit change from year to year.

CHEM 506. Special Topics in Physical Chemistry. 1 - 6 Unit. (Credit as arranged.) Lectures on advanced topics in physical chemistry presented by staff or visiting lecturers. Course title, content, and credit change from year to year.

CHEM 507. Special Readings in Chemistry. 1 - 6 Unit. Detailed study of a special topic in chemistry under the guidance of a faculty member.

CHEM 508. Special Readings in Chemistry. 1 - 6 Unit. Detailed study of a special topic in chemistry under the guidance of a faculty member.

CHEM 509. Special Topics in Analytical Chemistry. 1 - 6 Unit.

CHEM 601. Research. 1 - 18 Unit. (Credit as arranged.) Special research in an area of chemistry under the guidance of a faculty member.

CHEM 605. Chemistry Colloquium Series. 0 Units. Course content provided by Thursday chemistry department colloquia (or Frontiers in Chemistry lectures). Discussion sessions review previous lectures and lay foundation for forthcoming lectures.

CHEM 651. Chemistry Colloquium Series. 0 Units.

CHEM 651. Thesis M.S.. 1 - 18 Unit. (Credit as arranged.)

CHEM 701. Dissertation Ph.D.. 1 - 9 Unit. (Credit as arranged.) Prereq: Predoctoral research consent or advanced to Ph.D. candidacy milestone.

**Childhood Studies Program**

The Childhood Studies Program is an educational opportunity for undergraduate students interested in a wide array of issues concerning children and the experience of childhood. This interdisciplinary minor focuses on the life stages of infancy through adolescence and enables students to pursue interests in parenting, child development, gender, the life course and the place of children in society and culture.

While the Childhood Studies Program is situated in the College of Arts and Sciences, children and childhood are a focus of research and teaching in units throughout the university, including the School of Medicine, the Jack, Joseph and Morton Mandel School of Applied Social Sciences, the School of Law, the School of Dental Medicine, and the Frances Payne Bolton School of Nursing.

The Childhood Studies Program is associated with the Schubert Center for Child Studies, which sponsors research, lectures and programs on children and childhood and provides opportunities for student involvement in research, education and policy, including externships with local nonprofits.

**Undergraduate Program**

**Minor**

The undergraduate minor in childhood studies is built on a foundation in the social sciences. It is also suited, however, to students interested in exploring childhood from the perspectives of the natural sciences, the humanities, or the arts. The minor requires a minimum of 15 hours of course work; the courses must be taken in at least two different departments.

The courses listed below are accepted toward the minor. Other courses may be accepted with approval from one of the program co-directors.

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit</th>
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<tbody>
<tr>
<td>ANTH 306</td>
<td>The Anthropology of Childhood and the Family</td>
<td>3</td>
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<tr>
<td>ANTH 313</td>
<td>The Anthropology of Adolescence</td>
<td>3</td>
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<tr>
<td>ANTH 399</td>
<td>Independent Study</td>
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<tr>
<td>CHST 301/ANTH</td>
<td>Child Policy</td>
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<tr>
<td>305/POSC 382A</td>
<td>Experiential Learning in Child Policy</td>
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<tr>
<td>CHST 302/ANTH</td>
<td>Child Policy Externship</td>
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<td>308</td>
<td>Child Policy Externship and Capstone</td>
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<td>PSCL 398C</td>
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<td>CHST 399</td>
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<td>COSI 313</td>
<td>Language Development</td>
<td>3</td>
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<td>ENGL 369</td>
<td>Children's Literature</td>
<td>3</td>
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<tr>
<td>HSTY 387</td>
<td>Growing Up in America: 1607 - 2000</td>
<td>3</td>
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<tr>
<td>MUED 391</td>
<td>Music in Early Childhood</td>
<td>3</td>
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<td>NTRN 328</td>
<td>Child Nutrition, Development and Health</td>
<td>3</td>
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<tr>
<td>PSCL 230</td>
<td>Child Psychology</td>
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<tr>
<td>PSCL 329</td>
<td>Adolescence</td>
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<tr>
<td>PSCL 335C</td>
<td>Seminar and Practicum: Hospitalized Child</td>
<td>3</td>
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<tr>
<td>PSCL 344</td>
<td>Developmental Psychopathology</td>
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<tr>
<td>PSCL 393</td>
<td>Experimental Child Psychology</td>
<td>3</td>
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<tr>
<td>PSCL 397</td>
<td>Independent Study</td>
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<tr>
<td>SASS 390</td>
<td>Independent Study for Undergraduates</td>
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<tr>
<td>SOCI 320</td>
<td>Delinquency and Juvenile Justice</td>
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<td>SOCI 361</td>
<td>The Life Course</td>
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<tr>
<td>SOCI 375</td>
<td>Independent Study</td>
<td>1 - 3</td>
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</table>

Independent studies or one-time course offerings approved by one of the program co-directors are also accepted toward the minor.

* No more than four hours of practicum experience can count toward the minor.

**NOTE:** Students may count up to six of these hours toward a major in another field. If they are pursuing more than one major, they may count up to six hours toward each one.

**Co-Directors**

Jill E. Korbin, PhD
Associate Dean, College of Arts and Sciences; Lucy Adams Leffingwell Professpr, Department of Anthropology; Director, Schubert Center for Child Studies
Courses

CHST 301. Child Policy. 3 Units.
This course introduces students to issues in public policy that impact children and families. Local, state, and federal child policy will be considered, and topics will include, for example, policies related to child poverty, education, child welfare, juvenile justice, and children's physical and mental health. Students will learn how policy is developed, how research informs policy and vice versa, and a framework for analyzing social policy. Recommended preparation: One social sciences course or consent. Offered as ANTH 305, CHST 301, and POSC 382A.

CHST 302. Experiential Learning in Child Policy. 3 - 6 Units.
Focus on state and federal legislative policy impacting children, youth, and families. Course includes an experiential learning component at the state or federal level and a travel experience to either Columbus, OH or Washington, DC to learn firsthand how policy is formed. Students may take this course twice for credit. Offered as ANTH 307 and CHST 302.

CHST 398. Child Policy Externship. 3 Units.
Externsions offered through CHST 398/ANTH 308 give students an opportunity to work directly with professionals who design and implement policies that impact the lives of children and their families. Agencies involved are active in areas such as public health, including behavioral health, education, juvenile justice, childcare and/or child welfare. Students apply for the externships, and selected students are placed in local public or nonprofit agencies with a policy focus. Each student develops an individualized learning plan in consultation with the Childhood Studies Program faculty and the supervisor in the agency. CHST 398/ANTH 308 is a 3 credit-hour course and may be taken twice for a total of 6 credit hours. Offered as CHST 398 and ANTH 308. Prereq: CHST 301.

CHST 398C. Child Policy Externship and Capstone. 3 Units.
Externsions offered through CHST/ANTH/PSCL 398C give students an opportunity to work directly with professionals who design and implement policies that impact the lives of children and their families. Agencies involved are active in areas such as public health, including behavioral health, education, juvenile justice, childcare and/or child welfare. Students apply for the externships, and selected students are placed in local public or nonprofit agencies with a policy focus. Each student develops an individualized learning plan in consultation with the Childhood Studies Program faculty and the supervisor in the agency. Offered as CHST 398C, ANTH 398C, and PSCL 398C. Counts as SAGES Senior Capstone. Prereq: CHST 301.

CHST 399. Independent Study. 1 - 6 Unit.
Students propose topics for independent reading and research.

Department of Classics

The Department of Classics introduces students to the culture, life, and legacy of ancient Greece and Rome through courses in the Greek and Latin languages and literatures, in ancient history and archaeology, and in the visual and material cultures of the ancient Mediterranean world. When justified by enrollment, the department offers courses in Sanskrit and in ancient Indian religious texts. A relatively recent development is a focus on the classical tradition in Europe and beyond. The department faculty represents a range of academic disciplines and is committed, where appropriate, to an interdisciplinary approach in teaching and research.

The core purpose of the department is to offer the opportunity for study of the ancient classical languages, as a crucial point of entry into the conceptual worlds of Greece and Rome. Students are also exposed to the various facets of antiquity that made the ancient Mediterranean world the progenitor of the modern West, not least in its mingling of cultures and belief systems. The different sub-disciplines and methodologies represented in the department involve multiple ways of exploring and understanding antiquity. Our students explore the philological, literary, and philosophical dimensions of ancient texts, and they engage with material and visual culture and city form through archaeology, epigraphy, and art and architectural history. Further, they study major moments of the revival of antiquity and the various lenses through which subsequent eras understood or appropriated the past.

Knowledge of classical antiquity constitutes the backbone of a liberal education. It also provides an excellent basis for further professional training in whatever field a student may ultimately pursue; for informed engagement with the political, social, and cultural issues of our turbulent times; and for the appreciation and enjoyment of artistic and cultural achievement. A major in classics, or even a minor, may be (as it often has been) profitably combined with programs aimed toward law, medicine, management, diplomatic service, banking, journalism, library science, or politics; religious, philosophic, literary, or historical studies; careers in the fine arts (visual or performing); or museum or archival work.

Undergraduate Programs

Major
The core of the Classics major is the study of the languages and literatures of ancient Greece and Rome and the societies that spoke Greek and Latin until the end of the ancient world (usually taken as the 5th century of the Common Era). The major uniquely offers exposure to a range of approaches: literary, philological, historical, archaeological, art historical, philosophic, and anthropological. Further, the scope of the department has expanded to embrace the classical tradition in and even beyond Europe, with courses on literature and art and architecture up to the 20th century.

Concentrations
There are three separate tracks in the Classics major. Philology (Track A) is devoted to ancient languages and their associated literatures in the original languages (Greek, Latin, or Greek and Latin). Classical Civilization (Track B) focuses on ancient history, literature in translation, and archaeology. Classical Tradition (Track C) explores the legacy of antiquity from the European Middle Ages to the contemporary world. The relevant courses examine the various ways that subsequent civilizations and movements have drawn on the classical world for a wide range of purposes, and with an equally wide range of effects. Please note that for Tracks B and C, students must complete study of either Greek or Latin to at least the intermediate level.

Each track requires 10 courses (30 hours), and at least two of these courses must be at the 300 level. For students who elect to complete their junior and senior years in classics, two additional courses (6 hours) are required, CLSC 320 Departmental Seminar: Alexander the Great and CLSC 381 Classics Senior Capstone.
(CLSC 320 may count as one of the classics 300-level courses, provided the student takes his or her junior SAGES requirements outside of classics.)

In the Philology Concentration (Track A), students can earn one of three degrees: BA in Classics: Greek; BA in Classics: Latin; or BA in Classics: Greek and Latin. Students in Track A are required to take CLSC 231 Greek Civilization and CLSC 232 Roman Civilization; at least one 200-level or higher GREK or LATN course (for most students, this will mean taking GREK or LATN 101, 102 and 201); and any combination of GREK, LATN, or CLSC courses to bring their course total to 10 (30 hours), at least two of which must be at the 300 level. The elective CLSC courses should consist of courses that focus on the period before the 6th century of the Common Era and not the Classical Tradition (Track C).

In the Classical Civilization Concentration (Track B), students are required to take CLSC 231 Greek Civilization and CLSC 232 Roman Civilization; at least one 200-level or higher GREK or LATN course (for most students, this will mean taking GREK or LATN 101, 102 and 201); and any combination of GREK, LATN, or CLSC courses to bring their course total to 10 (30 hours), at least two of which must be at the 300 level. The elective CLSC courses should consist of courses that focus on the period before the 6th century of the Common Era and not the Classical Tradition (Track C).

In the Classical Tradition Concentration (Track C), students are required to take and at least one course in Greek or Latin at the intermediate level or higher (students who enter the program without any Greek or Latin are required to take the introductory sequence in either language, which count toward the ten-course requirement). The department offers four 200-level courses in Classical Tradition, focusing respectively on the Renaissance and Baroque, the Enlightenment, Architecture and Urbanism from the Renaissance to the 20th Century, and Classics in Film (see list below). Students are required to take at least two of these courses.

Students in the Classical Tradition Concentration must take two of the following four 200-level courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLSC/WLIT 220</td>
<td>Art &amp; Literature in the Classical Tradition, Pt 1: Renaissance and Baroque (14th to 17th centuries)</td>
</tr>
<tr>
<td>CLSC/ARTH 221</td>
<td>Building on Antiquity</td>
</tr>
<tr>
<td>CLSC/WLIT 222</td>
<td>Classical Tradition 2: Birth of Archaeology</td>
</tr>
<tr>
<td>CLSC/WLIT 224</td>
<td>Sword and Sandal: The Classics in Film</td>
</tr>
</tbody>
</table>

Students must take at least one course at the 300 level from the following list:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLSC/ARTH 311</td>
<td>Rome: City and Image</td>
</tr>
<tr>
<td>CLSC 313/COGS 318</td>
<td>Thinking Communication in Ancient and Medieval Literature</td>
</tr>
<tr>
<td>CLSC 323/WLIT 423</td>
<td>Angels and Daimons: The Origins of Inspiration</td>
</tr>
<tr>
<td>CLSC 324/WLIT 424</td>
<td>The Sublime and Grotesque in Literature</td>
</tr>
<tr>
<td>CLSC/COGS 340</td>
<td>Seminar in Enlightenment Art and Literature: Piranesi and Vico</td>
</tr>
</tbody>
</table>

Keeping in mind that the student should have at least two 300-level courses out of ten, the remaining courses (two to four, depending on whether the student is required to take the beginning language sequence) may be chosen from the above lists or, subject to advisor’s approval, from the Classics, Greek, or Latin courses in general.

**Study in Related Fields**

Each student completing the classics major is strongly advised to choose a related minor, selected in consultation with and approved by the departmental advisor, in such closely related fields as anthropology, art history, philosophy, comparative literature, history, theater, or English. The association between the department and the World Literature Program is especially close.

**Departmental Honors**

Departmental honors are given to students who earn the grade of A for their senior dissertation in CLSC 382 Senior Honors Thesis and maintain a GPA in the major of 3.5.

**The Minor**

A minor in classics is designed to acquaint the student with aspects of the ancient civilizations of Greece and Rome by means of 15 hours of course work. These 15 hours may be any combination of Greek, Latin, and Classics courses, at least 3 hours of which must be at or above the 300 level. While the study of either Greek or Latin is encouraged, neither is required for the minor.

**Graduate Study**

**Graduate Certificate Program/Post-Baccalaureate**

The purpose of a graduate certificate program in Classics, known in our wider discipline as a post-baccalaureate certificate—or “post-bac” for short—is to prepare students who started “late” with Greek and Latin (i.e., after high school) for graduate work in Classics and related fields such as Philosophy, Art History and Medieval Studies. As a rule, such students need to solidify their language skills and gain experience in reading large quantities of Greek and/or Latin at an advanced speed. Students planning graduate study will have a way to prepare themselves without impossible pressures and time constraints. It takes many years of patient study to master Greek and Latin; one must devote hours to the project every single day. Few people are able to progress satisfactorily in ancient languages on their own, without instruction and without peers.

Our one-year program provides a bridge to full-fledged graduate study, although some individuals may choose to pursue our certificate simply as a means of enriching their lives.

We give post-bac students training in Greek and Latin, and the guidance they need to gain admittance into MA and PhD programs in Classics and other Humanities disciplines. Here at CWRU, our post-bac students regularly interact not only with our advanced undergraduate classics majors but also with graduate students in History, English and Art History, among other fields. This blending furnishes them with useful perspectives on the realities of doctoral studies in the Humanities.

**World Literature MA: Classics Track**

Qualified students may pursue graduate work in Classics through the MA in the World Literature Program (p. 329) (WLIT). Classics courses at the 300 level may be taken for graduate credit in this way.
Department Faculty

Paul A. Iversen, PhD  
(Ohio State University)  
Associate Professor and Chair  
Greek and Latin epigraphy; Hellenistic history and culture; Greek and Roman New Comedy

Ricardo A. Apostol, PhD  
(University of Michigan)  
Assistant Professor  
Augustan poetry and culture; Hellenistic poetry; material culture

Florin Berindeanu, PhD  
(University of Georgia)  
Instructor; Director, World Literature Program; Secondary Appointment, Department of Cognitive Science  
European literature; literary and semiotic theory; mysticism

Peter E. Knox, PhD  
(Harvard University)  
Eric and Jane Nord Family Professor and Director of the Baker-Nord Center for the Humanities  
Greek poetry of the Hellenistic period, Latin poetry, Roman culture, ancient epic and classical reception.

Rachel Hall Sternberg, PhD  
(Princeton University)  
Elsie B. Smith Professor in the Liberal Arts  
Ancient art and classical archaeology

Timothy R. Wutrich, PhD  
(Tufts University)  
Senior Instructor  
Vergil; trojan-cycle plays of Euripides; Homeric hero in drama since antiquity

Secondary Faculty

Maggie L. Popkin, PhD  
(The Institute of Fine Arts, New York University)  
Assistant Professor, Department of Art History and Art  
Ancient Roman art and archaeology

Deepak Sarma, PhD  
(University of Chicago)  
Professor, Department of Religious Studies  
Hinduism; Indian philosophy; method and theory in the study of religion

CLSC Courses

CLSC 193. The Ancient World. 3 Units.  
Ancient Western history from the origins of civilization in Mesopotamia to the dissolution of the Roman Empire in the West. Offered as CLSC 193 and HSTY 193.

CLSC 199. Athens: In Search of Socrates. 3 Units.  
Students selected for their strong background or interest in Greek Civilization spend Spring Break in Athens, Greece (thanks to a collaboration between CWRU’s Department of Classics and the Athens Centre). They follow an intensive seven-day itinerary of travel, visiting major monuments and museums including the Acropolis, Delphi, Epidaurus, and Aegina. Two class sessions of instruction in modern Greek help them to interact with people they meet; but the overwhelming emphasis lies on Classical Athens, the historical-cultural setting for the emergence of Western moral philosophy. The focus of this mini-course is on the figure of Socrates and the agenda of moral philosophy that the Athenian sage established. Readings from Plato, Aristophanes, and Aristotle. Via the Socratic method, students will also study Aristotle’s Ethics and test the applicability of that foundational text to their own lives.

CLSC 203. Gods and Heroes in Greek Literature. 3 Units.  
This course examines major works of Greek literature and sets them in their historical and cultural context. Constant themes are war, wandering, tyranny, freedom, community, family, and the role of men and women within the household and the ancient city-state. Parallels with modern life and politics will be explored. Lectures and discussions. Offered as CLSC 203 and WLIT 203.

CLSC 204. Heroes and Hustlers in Latin Literature. 3 Units.  
This course constitutes the second half of a sequence on Classical literature. Its main themes are heroism vs. self-promotion, love vs. lust, and the struggle between democracy and tyranny. These topics are traced in a variety of literary genres from the period of the Roman republic well into the empire. Parallels with modern life and politics will be drawn. Offered as CLSC 204 and WLIT 204.

CLSC 206. Ancient and Medieval Spain: Prehistory to 1492. 3 Units.  
This course focuses on the history of the Iberian peninsula from before the Roman conquest from the Iberians, Greek, and Carthaginian settlements, through Roman, Visigothic, and Muslim rule to the conquest of Ferdinand and Isabella of the last non-Christian territory on the peninsula in 1492. The issues of conquest, frontier, cultural diversity, and change, tolerance, and intolerance will be examined. Offered as CLSC 206 and HSTY 206.

CLSC 210. Byzantine World 300-1453. 3 Units.  
Development of the Byzantine empire from the emperor Constantine’s conversion to Christianity and founding of the eastern capital at Constantinople to the fall of Constantinople to Turkish forces in 1453. Offered as CLSC 210 and HSTY 210.

CLSC 220. Art & Literature in the Classical Tradition, Pt 1: Renaissance and Baroque (14th to 17th centuries). 3 Units.  
Through lectures, varied assignments, and visits to the Cleveland Museum of Art this course will introduce students to the major issues in the study of early modern art and literatures. The emphasis will inevitably be on Italy, as the place where the physical remains of ancient Rome confronted and inspired such remarkable masters as Michelangelo (as poet and artist), Palladio, Gian Lorenzo Bernini, Nicholas Poussin (Bernini and Poussin are represented in the CMAI), though some artists -- notably Leonardo -- resisted the lure of the classical past. From Italy new ideas spread to the rest of Europe and beyond. We will not have much time to study Shakespeare in the course, but we will not be able to ignore the greatest author of the Renaissance period. Like Shakespeare, we will move between the court and the city, between scenes of often-endangered order and scenes of sometimes-productive disorder, in which classical models provided a key cultural and even psychological resource in challenging times. Recommended preparation: CLSC 112. Offered as CLSC 220 and WLIT 220.
CLSC 221. Building on Antiquity. 3 Units.
Beginning with Ancient Greece and Rome and ending in Cleveland, the course will provide orientation in the architectural orders and in most periods of European and Euro-American architectural history, as well as, to an extent, architectural criticism. The issue of how architecture has meaning will be central, not least in connection with the formalized "language" of classicism and the emergence of development of building types (temple, museum, civic hall, transportation buildings, etc.). We will also review more subtle ways in which architecture conveys meaning or mood, and the assignment of gendered associations to certain architectural elements. The course will consider more or less blatant political uses of architecture and architectural imagery, but also more elusive and/or ambiguous cases, as well as the phenomenon of the shifting meanings of architecture through changes of era, owner, audience, etc. Offered as ARTH 221 and CLSC 221.

CLSC 222. Classical Tradition 2: Birth of Archaeology. 3 Units.
The course will focus on the history of diverse methods for studying societies remote in time and space; i.e., on the formation of the distinct disciplines of archaeology and anthropology, and the interest in the origins of human society and cultural practices. The birth of archaeology occurred in the context of the profound transformation of European cultural life in the eighteenth century, the era of the Enlightenment. On the basis of a range of cultural productions (literary and historical texts, objects of luxury and use, etc.), we will study visual and literary works and consider the relationship between different modes of artistic production and expression, as well as the marketing and display of prestigious objects, whether ancient or modern. We will consider the eighteenth-century model of experiential education, the "Grand Tour," and the formation of private and public collections, as well as the emergence of the museum as institution. Finally, we will also consider important recent work on the relationship between the production of luxury commodities (sugar, coffee, tea, etc.) through the plantation economy in the Americas and beyond and the development of attitudes and ideas in Europe. Offered as CLSC 222 and WLIT 222.

CLSC 224. Sword and Sandal: The Classics in Film. 3 Units.
Gladiator. Alexander. The 300. Contemporary society's continuing fascination with putting the ancient world on the big screen is undeniable; and yet the causes underlying this phenomenon are not quite so readily apparent. In this course we will watch and discuss a number of movies about the ancient world, running the gamut from Hollywood classics such as Ben-Hur and Spartacus to more recent treatments (the aforementioned 300 and Gladiator, for starters), and from the mainstream and conventional (Clash of the Titans, Disney's Hercules) to the far-out and avant-garde (Fellini's Satyricon, anyone?). As we do so we'll learn quite a bit about the art and economics of film, on one hand, and the ancient world, on the other. And yet what we'll keep coming back to are the big questions: what does our fascination with the ancient Mediterranean tell us about ourselves as a society? Why do such movies get made, and what kinds of agendas do they serve? To what extent can we recapture the past accurately? And if we can't, are we doomed to just endlessly projecting our own concerns and desires onto a screen, and dressing them in togas? No knowledge of ancient languages is required for this course. Offered as CLSC 224 and WLIT 224.

CLSC 226. Greek and Roman Sculpture. 3 Units.
This survey course explores the history of sculpture in ancient Greece and Rome, from the Mycenaean period through the reign of Constantine (A.D. 306-337). Students learn how to analyze works of sculpture in terms of form, function, and iconography. Particular emphasis is placed on situating sculptures within the changing historical, cultural, political, and religious contexts of the classical world, including the Greek city-state, the Hellenistic kingdoms that followed Alexander the Great, the Roman Republic, and the Roman Empire. Students will study a variety of sculptures--such as statues, reliefs, and carved gems--from across the Greek and Roman worlds. As we study sculptures from the classical world, we will consider questions of design, patronage, artistic agency, viewer reception, and cultural identity. We will also consider the cultural interaction between ancient Greece and Rome and what impact this had on the production and appearance of sculpture. Offered as ARTH 226 and CLSC 226.

CLSC 228. Ancient Greek Athletics. 3 Units.
Exploration of the role of athletics in the ancient, primarily Greek world, and their reflection in the art of the period. Offered as ARTH 228 and CLSC 228.

CLSC 230. Ancient Roman Art and Architecture. 3 Units.
This survey course explores the history of Roman art and architecture from Rome's founding in 753 B.C. up through the reign of Constantine (A.D. 306-337). Students learn how to analyze works of art and architecture in terms of form, function, and iconography. Particular emphasis is placed on situating objects and monuments within the changing historical, cultural, political, and religious contexts of ancient Rome, including major changes such as the shift from the Roman Republic to the Roman Empire and the advent of Christianity. Students will study a variety of media--such as statues, painting, metalwork, and domestic and public architecture--from the city of Rome itself as well as Roman provinces as far afield as Asia Minor and North Africa. The course will introduce students to famous buildings such as the Colosseum and the Pantheon but also to lesser known but equally important works. As we study major objects and monuments from ancient Rome, we will consider questions of design, patronage, artistic agency, viewer reception, and cultural identity. We will also consider Rome's complex relationship to Greek culture and attempt to answer the question of what makes Roman art distinctively "Roman." Offered as ARTH 230 and CLSC 230.

CLSC 231. Greek Civilization. 3 Units.
This course constitutes the first half of a year-long sequence on classical civilization. It examines the enduring significance of the Greeks studied through their history, literature, art, and philosophy. Lectures and discussion. (For the second course in the sequence, see CLSC 232 and HSTY 232.) Offered as CLSC 231 and HSTY 231.

CLSC 232. Roman Civilization. 3 Units.
The enduring significance of the Romans studied through their history, literature, art, and philosophy. Lectures and discussion. Offered as CLSC 232 and HSTY 232.

CLSC 295A. Greek and Latin Elements in English: The Basic Course. 1.5 Unit.
A self-paced, computer-assisted course in the classical foundations of modern English in which the student learns the basic principles on which roots, prefixes, and suffixes combine to give precise meanings to composite words.
CLSC 295B. Greek and Latin Elements in English: Biomedical Terminology. 1.5 Unit.
(See CLSC 295A.) Advanced section that is oriented especially toward scientific and medical terminology. Prereq or Coreq: CLSC 295A.

CLSC 301. Ancient Philosophy. 3 Units.
Western philosophy from the early Greeks to the Skeptics. Emphasis on the pre-Socratics, Plato and Aristotle. Recommended preparation: PHIL 101 and consent of department. Offered as CLSC 301 and PHIL 301.

CLSC 302. Ancient Greece: Archaic, Classical, and Hellenistic Periods. 3 Units.
The rise of Hellenic thought and institutions from the eighth to the third centuries B.C., the rise of the polis, the evolution of democracy at Athens, the crises of the Persian and Peloponnesian Wars, fifth-century historiography, the growth of individualism, and the revival of monarchy in the Hellenistic period. Offered as CLSC 302 and HSTY 302.

CLSC 304. Ancient Rome: Republic and Empire. 3 Units.
Growth and development of the Roman state from the unification of Italy in the early third century B.C. to the establishment of the oriental despotism under Diocletian and Constantine. The growth of empire in the Punic Wars, the uncertain steps toward an eastern hegemony, the crisis in the Republic from the Gracchi to Caesar, the new regime of Augustus, the transformation of the leadership class in the early Empire, and the increasing dominance of the military over the civil structure. Offered as CLSC 304 and HSTY 304.

CLSC 305. Sanskrit Religious Texts. 3 Units.
Introduction to the Sanskrit language and culture through the reading of selected texts taken from the ancient religions of South Asia. Offered as CLSC 305 and RLGN 305.

CLSC 309. Advanced Sanskrit Religious Texts. 3 Units.
This class is a continuation of RLGN 305/CLSC 305, the introduction to the Sanskrit language and culture. In RLGN 309/CLSC 309 students will learn advanced Sanskrit grammar and syntax. Previous knowledge of Sanskrit is required. We will finish the lessons from Devavanipravesika that we began in the introductory course. We will then translate sections for the Bhagavad Gita. Offered as CLSC 309 and RLGN 309.

CLSC 311. Rome: City and Image. 3 Units.
This course studies the architectural and urban history of Rome from the republican era of the ancient city up to the eighteenth century using the city itself as the major "text." The emphasis will be placed on the extraordinary transformations wrought in the city, or at least in key districts, by powerful rulers and/or elites, especially in the ancient empire and in the Renaissance and baroque eras. In a larger perspective, the great construction projects exerted a far-reaching effect within and beyond Europe, but we will study them in relation to their topographical situation, their functions, and their place in a long history of variations on prestigious themes since many of the artworks and the urban settings featured in the course carry the mark of the Long history of the city itself. Recommended preparation: At least one 200-level course in ANTH, ARTH, CLSC, ENGL, HSTY, or RLGN. Offered as ARTH311/411 and CLSC 311.

CLSC 312. Women in the Ancient World. 3 Units.
The course offers a chronological survey of women's lives in Greece, Hellenistic Egypt, and Rome. It focuses on primary sources as well as scholarly interpretations of the ancient record with a view to defining the construction of gender and sexuality according to the Greco-Roman model. Additionally, the course aims to demonstrate how various methodological approaches have yielded significant insights into our own perception of sex and gender. Specific topics include patriarchy and the antagonism between male and female in myth; the legal, social, economic, and political status of women; the ancient family; women's role in religion and cult; ancient theories of medicine regarding women; pederasty and homosexuality. Offered as CLSC 312 and WGST 312.

CLSC 313. Thinking Communication in Ancient and Medieval Literature. 3 Units.
The ancients were much concerned with the nature and validity of signs: Important decisions depended on the flight of birds or the coloration of the liver of a sacrificial victim. The relationship of language to truth, i.e., a reality beyond the contingent, was a crucial issue, not least because of the rise of sophist rhetoric: for an orator, language was a tool in a contest rather than a means to true understanding. The discipline of medicine, developed by such important figures as Galen and Hippocrates, depended on the interpretation of physical signs to diagnose and treat ailments of mind and body. The term for the theory of signs--semiotics--is derived from the Greek term "semioiatrie," and for many Greek philosophers and their Roman and medieval successors the sign was a key issue. For Christians especially, new forms of vision and discerning truth presented particular problems: after all, the Christian God revealed his intentions through "portents" that had to be read and interpreted. And even if sacred scripture was in some way understood as encapsulating the whole word, there were countless passages requiring clarification or adaptation to contemporary situations. In other words, the concern was with the relationship between a universe of structured signs (the subject of semiotics) and structures of interpersonal communication (pragmatics). Offered as CLSC 313 and COGS 318. Prereq: WLIT 211 or WLIT 212.

CLSC 314. The Poetics of Eros: Love Poetry from Sappho to Shakespeare and Beyond. 3 Units.
This course will explore the theme of love in all its multiplicity of meanings and changes over time from its first appearances in Near Eastern poetry (Song of Songs) and Greek lyric (the titular Sappho) through its various elaborations, Roman, Medieval, Renaissance, and Romantic. It will also address theoretical inquiries into the nature and purpose of erotic desire and its evaluation as an aesthetic phenomenon, including Freudian theory and modern contributions such as Roland Barthes and Georges Bataille. No knowledge of the original languages required. Offered as CLSC 314 and WLIT 314.
CLSC 316. Greek Tragedy. 3 Units.
This course provides students the opportunity to read a significant number of ancient Greek tragedies in modern English translations. We shall read, study, and discuss selected works by Aeschylus, Sophocles, and Euripides, and attempt to understand the plays as literature composed for performance. We shall study literary elements within the plays and theatrical possibilities inherent in the texts. As we read the plays, we shall pay close attention to the historical context and look for what each play can tell us about myth, religion, and society in ancient Athens. Finally, we shall give occasional attention to the way these tragic dramas and the theater in which they were performed have continued to inspire literature and theater for thousands of years. Lectures will provide historical background on the playwrights, the plays, the mythic and historical background, and possible interpretation of the texts as literature and as performance pieces. Students will discuss in class the plays that they read. The course has three examinations and a final project that includes a short essay and a group presentation. Offered as CLSC 316, WLIT 316, WLIT 416.

CLSC 318. Landscape Archaeology and Epigraphy. 3 Units.
Landscape archaeology addresses the complex ways that people have consciously and unconsciously shaped the land around them. As by-products of the interaction between people and place, landscapes designate spaces occupied by specific social groups whose members draw from their environs a shared identity and who situate their actions within specific normative frameworks. The landscapes of the Greek and Roman East are no exception to this. As "cultural landscapes," they were the scene of thousands of years of actions, including the organizing of space or the altering of the land for diverse purposes such as subsistence, or for economic, social, political, religious and military concerns. As such they offer us the possibility to investigate the agencies, actions, and negotiations between particular communities and the various greater powers that exercised control over them. This course will, therefore, introduce students to the study of Landscape Archaeology/Intensive Surveying through five weeks of hands-on fieldwork in the region of Isparta, Turkey, the locus of an ancient landscape called Northwestern Pisidia about which little is known. This landscape has a long storied past, lying as it did along a fault line between earthshaking empires, including the Hittites, Lydians and Persians to North and to the East, and the Greeks, Macedonians and Romans to the West. As such it was a contested space, not only in terms of the physical control of the land, but also the culture. This course will investigate this cultural landscape through the analysis of the archaeological material found. There will also be an opportunity to work with the archaeological material in the Isparta Museum, especially the epigraphical material there. We will also take field trips to important ancient sites and museums in the area to better grasp the region's ancient cultural profile and context. In addition, we will discuss archaeological ethics, issues of cultural patrimony, the importance of teamwork, and the need to work side by side with the local community. Offered as CLSC 318 and CLSC 418.

CLSC 319. Etruscan Archaeology and Epigraphy. 3 Units.
This course will study the Etruscan civilization from its origins to its demise in 390 BCE. The Etruscans, with the exception of the Etruscan language, are largely unknown to us. We will study the Etruscan culture through a critical examination of the traditional separation of East and West--or the three continents (Europe, Asia, and Africa) distinguished in antiquity--this course qualifies as a Global and Cultural Diversity course. Offered as CLSC 320 and HSTY 320. Counts as SAGES Departmental Seminar.

CLSC 321. The Archaeology of Iron Age Italy and Sicily, ca. 1000-300 BCE. 3 Units.
This course traces the early history and archaeology of the Italian Peninsula and Sicily from ca. 1000 BCE to 300 BCE. During this period, the movement of people brought with it a transfer of people, ideas, and culture (both social and material) that would transform the population and landscape of ancient Italy and Sicily. We will look first at Southern Italy and Sicily, where, from about 750 BCE, Greek and Phoenician colonists settled. We will examine the characteristics of Greek and Phoenician colonies and monuments, as well as the characteristics of the interactions between the new arrivals and the indigenous population, especially the Sikels. We will then examine how the Villanovan culture was supplanted by the Etruscans in west-central Italy. Through the close examination of the material culture we will address topics such as status, urbanization, religion and ritual, and the cultures of Italy and Sicily within the wider Mediterranean world. Finally, we will look at another movement of people and politics: the expansion of Roman hegemony throughout the peninsula. Numerous theories attempt to explain the effect Roman occupation had on the other populations. We will analyze critically these theories and look for ourselves on the numerous ways indigenous populations could respond to "foreign" occupiers and how the occupiers responded to the indigenes. We will "read" material culture almost like text, guided by concepts such as "style," "agency" and "habit" among others. Through these lenses we will examine the archaeological material from multiple points of view (social, economic, religious, political). In turn, recent theoretical advances that seek to explain the processes of accommodation and emulation of, and resistance to, outside cultural influences will be looked at with a critical eye so that we can come away with fresh ideas about understanding what, and who, culture really is. Offered as CLSC 321 and HSTY 321.

CLSC 320. Departmental Seminar: Alexander the Great. 3 Units.
This course is the Classics Departmental Seminar in the SAGES sequence, though it can also be taken for regular credit in Classics or History. The seminar on Alexander the Great is normally taken in the Spring semester of junior year, and offers students a firm grounding in the diverse materials, methods, and approaches that can be brought to bear on the study of Greco-Roman antiquity and of its legacy up to today. Alexander's career is urgently relevant today for two primary reasons: the establishment of new forms of interaction between European "western" and Asian "eastern" civilizations; and the idea of global domination, wedding Greek and Asian as well as African (Egyptian) conceptions of rule and governance. Beyond the exploration of the ancient world of, or shaped by, Alexander, we will focus also on the reception of the historical figure, i.e., on the sometimes fantastic image of Alexander diffused in later epochs (Islamic, medieval) as well as on the more critical but often ideologically slanted early modern approach. Because of the expansion of the scope of the seminar (as of Alexander himself) beyond Europe and the critical examination of the traditional separation of East and West--or the three continents (Europe, Africa, and Asia) distinguished in antiquity--this course qualifies as a Global and Cultural Diversity course. Offered as CLSC 320 and HSTY 320. Counts as SAGES Departmental Seminar.
CLSC 322. Roman Drama and Theater. 3 Units.
This course is designed as a continuation of and companion to CLSC/WLIT 316/416 Greek Tragedy in English Translation, although it may be taken without having taken, or before having taken, that course. Students in Roman Drama and Theater will read a significant number of ancient Roman plays in modern English translation and study non-literary theatrical entertainment of the Roman Republic and Empire, including mime and pantomime, gladiatorial shows, political speeches, courtroom drama, and various other spectacles. The dramatic texts that we shall study include the fragments of early Latin drama, selected comedies by Plautus and Terence, and the tragedies of Seneca, and the forensic speeches of statesman such as Cicero. We shall also consider Greek and Roman literature that comments on Roman theatrical practices. These works will be read for their literary merits and theatrical possibilities, while at the same time examining them for what they can tell us about Roma culture and society. Similarly, when studying the non-literary theatrical works we shall examine historical and theatrical context including archaeological evidence from theaters and amphitheaters and material remains (masks, depictions of actors and gladiators on vases, terra cotta lamps, mosaics, etc.). Finally, while the majority of the course focuses on drama originally written in Latin and theatrical entertainments performed in ancient Rome, the course will conclude with a survey of selected post-classical works indebted to the tradition of Roman drama and theater. Authors to be studied include Hrotsvitha, Marlowe, Shakespeare, Racine, Molière, and the legacy of Roman drama and theater in contemporary stage and cinema such as Sondelms A Funny Thing Happened on the Way to the Forum. Thus a secondary concern will be to consider how and in what ways the legacy of Roman drama and theater has continued to shape the dramatic arts since antiquity. Offered as CLSC 322, CLSC 422, WLIT 322, and WLIT 422.

CLSC 323. Angels and Daimons: The Origins of Inspiration. 3 Units.
The age old myth of the pact with the devil is central to some of the masterpieces of Western literature. Goethe's poem is focused on the battle between good and evil, angelic and demonic as archetypes of humanity. The confrontation between the two forces illustrates the perennial dichotomy of creation vs. destruction (apocalypse). They represent the origin of life and its continuation even when the angelic has been defeated. The course will contain philosophical and literary readings that treat the opposition, and sometimes simultaneously, of angelic and daimonic. Plato and the Neo-Platonic tradition will be explored in the course as well as various readings from Middle Ages up to 18th century that address the issue of inspiration through contamination with the mysterious forces of the invisible world. Offered as CLSC 323, CLSC 423, WLIT 323 and WLIT 423.

CLSC 324. The Sublime and Grotesque in Literature. 3 Units.
Early on in Western culture the question of sublime and grotesque was addressed by philosophers and writers. Aristotle and especially Longinus initiated the debate over what exactly made a work of art "sublime" or "Grotesque." This debate eventually in the 18th century gave birth to the discipline of aesthetics, which is one of the main foci of this course. To that end, in this course we will examine a few literary works in light of the most representative theories around the concept of sublime and grotesque: Aristotle, Longinus, Kant, Burke, Baumgartner, Nietzsche and Kierkegaard. Their theories will be applied to some of the most celebrated literary masterpieces written by Homer, Ovid, Dante, Cervantes and others. Offered as CLSC 324, CLSC 424, WLIT 324 and WLIT 424.

CLSC 325. Art at the Crossroads of Religion: Polytheistic, Christian, and Islamic Art in Antiquity. 3 Units.
People often single out the reign of Constantine (A.D. 306-337) as the point in history when Rome transformed from a polytheistic empire to a Christian empire. This course questions the strict divide between the categories of "pagan" and "Christian" in Rome in the imperial period and beyond. Through a close examination of the artistic and architectural record, students will come to understand that this dichotomy is a modern invention; for people living in the Roman Empire, religious identities were extraordinarily fluid. Indeed, traditional polytheistic religion and Christianity remained closely intertwined for centuries after Constantine "Christianized" the Empire. Moreover, religious pluralism had been a fundamental part of Roman culture since the founding of ancient Rome. We will survey a range of material culture, including public statuary, sarcophagi, silver hordes, and temples and churches. We will also examine sites such as the border city of Dura-Europos in Syria to explore how religious identities in the Roman Empire (including Judaism, early Christianity, and so-called mystery cults) intertwined even when Rome was still supposedly a "pagan" Empire. The course pays particular attention to the art and architecture produced under Constantine, whom people today often remember as Rome's first Christian emperor but who represents, in fact, a complex amalgam of polytheistic and monotheistic practices and identities. We will also explore how Christian art slowly but ultimately became the predominant visual culture in the Roman Empire. Finally, we will examine how Early Islamic art and architecture exploited the Greco-Roman visual tradition to the ends of this new religion. Offered as ARTH 325, ARTH 425 and CLSC 325.

CLSC 326. Rome on Site: The Archaeology of the Eternal City. 3 Units.
This course offers the opportunity to examine firsthand Roman remains spanning 500 years of the city's history. For three weeks we will explore all sections of Rome and discover how different spheres of Roman life, such as religion, politics, leisure, and death, combined to shape one of the most renowned cityscapes of the ancient Mediterranean world. The course constitutes a mix of museum and site visits to expose us to the artifacts that help us interpret the Roman world, including art and other types of material culture, and the monumental architecture dominating much of Rome to this day. We will also explore important sites outside of the city, including Rome's remarkably well-preserved port at Ostia, the Emperor Hadrian's magnificent villa at Tivoli, and an optional visit to Pompeii and Herculaneum during an extended weekend. Some of the questions we will be asking when visiting the sites include: How did the expansion of the Roman Empire influence the stylistic repertoires of the capital's artists and architects? How did the changing political environment shape the topography of the city from Republic to Empire? How can we read political messages and propaganda in the ancient structures? How did (and does) Rome live among, use, and reuse ancient remains? Students will be expected to be active participants in the daily tours. All students will be presenting on various structures as we come to them (topics to be assigned in advance of the trip). Graduate students are responsible for leading a day tour (with my assistance) - to create the itinerary and develop the thematic framework. Grades will be based on participation on site, presentations, and a paper. Offered as CLSC 326 and CLSC 426.
CLSC 327. The Parthenon Then and Now: New Discoveries, Old Problems and Reception. 3 Units.
The Parthenon is an icon of western art and culture. Over 250 year of scholarship on this world-renowned building have revealed many of its secrets, but numerous questions still remain. New finds on the Acropolis itself and elsewhere in Greece have shed light on some of these issues, and as a result new theories abound. This seminar offers an overview of the temple, its architecture and sculpture, and will investigate its place in the civic and religious ideology of classical Athens. The course will also trace the Parthenon's many post-classical permutations, into a Christian Church and an Islamic mosque, and its impact on later western art and architecture. Finally the class will debate the moral and ethical issue of the Elgin Marbles - to repatriate them to Greece or to retain them in the British Museum in perpetuity. Offered as ARTH 327, ARTH 427, CLSC 327, CLSC 427.

CLSC 329. Marvels of Rome: Monuments and Their Decoration in the Roman Empire. 3 Units.
This course examines some of the most famous monuments of the Roman Empire, including Nero's Golden House, the Colosseum, the Pantheon, Hadrian's Villa at Tivoli, and the lavish villa of Piazza Armerina in Sicily. We will study each monument in depth, delving into the architecture, paintings, sculptures, mosaics, and social functions of each monument. Students will learn how to analyze artistic and archaeological evidence, ancient textual evidence (poems, prose, and inscriptions), and secondary scholarship to reconstruct the visual appearances and historical and cultural contexts of the monuments in questions. Throughout the course, students will gain a new appreciation and deeper understanding of some of the most iconic buildings of the classical tradition. Offered as ARTH 329, ARTH 429, and CLSC 329.

CLSC 330. Topics in Classical Tradition. 3 Units.
This course will examine facets and tendencies of cultural development in modern Europe and beyond which involve the engagement of historians, philosophers, literary authors and critics, artists, architects, and/or society in general with the classical world and its legacy. In some cases courses will be programatically associated with special events, e.g., exhibitions in The Cleveland Museum of Art. No prerequisites have been included, but students taking this course should have completed intermediate humanities courses, preferably in CLSC/LATN/GREK as well as WLIT. Offered as CLSC 330 and CLSC 430.

CLSC 331. Dante and the Classical Tradition: Middle Ages into Modernity. 3 Units.
"Dante and the Classical Tradition" will introduce through the complex work of Dante the concept of classical tradition as an all-encompassing cultural term. Dante represents the grandiose example of the artist who seeks the complete synthesis between humanities and sciences and their incessant collaborative effort to broaden as much as possible the depths of human knowledge. Philosophy, Geography, Physics, Linguistics, Astronomy and Literature are steady landmarks in Dante's work through which he aims to speak about the necessity of ever maintaining continuity between all domains of human knowledge. Dante's work proposes high levels of excellence and while the course's focus will be on his literary output the scientific interests and treatises he demonstrates will not be omitted during class discussion and bibliography included in the syllabus. Last but not least the focus will be on how we understand today the concept of classical tradition as a result of Dante's writings. Offered as CLSC 331, CLSC 431, WLIT 331 and WLIT 431.

CLSC 332. Art and Archaeology of Ancient Italy. 3 Units.
The arts of the Italian peninsula from the 8th century B.C. to the 4th century A.D., with emphasis on recent archaeological discoveries. Lectures deal with architecture, sculpture, painting, and the decorative arts, supplemented by gallery tours at the Cleveland Museum of Art. Offered as ARTH 332, CLSC 332, and ARTH 432.

CLSC 333. Greek and Roman Painting. 3 Units.
Greek vase painting, Etruscan tomb painting and Roman wall painting. The development of monumental painting in antiquity. Offered as ARTH 333, CLSC 333, and ARTH 433.

CLSC 334. Art and Archaeology of Greece. 3 Units.
A survey of the art and architecture of Greece from the beginning of the Bronze Age (3000 B.C.) to the Roman conquest (100 B.C.) with emphasis on recent archaeological discoveries. Lectures deal with architecture, sculpture, painting, and the decorative arts, supplemented by gallery tours at the Cleveland Museum of Art. Offered as ARTH 334, CLSC 334, and ARTH 434.

CLSC 340. Seminar in Enlightenment Art and Literature: Piranesi and Vico. 3 Units.
This course explores aspects of the European eighteenth century as a transformative epoch in the history of western culture. Though the Enlightenment is usually associated especially with France, in this course we will focus on Italy, as the irresistible goal of travelers taking part in the "Grand Tour," and as a landscape of powerful ancient and modern architecture and artworks universally recognized as exemplary. In particular we will study one of the strangest and most fascinating visual artists of the period, the self-proclaimed architect Giovanni Battista Piranesi (1720-1778) famous no less now than in his own time for his fantastic prison engravings as well as his views of Rome, involving a radical rethinking of the city as a particular kind of inhabited as well as imagined space. Piranesi's polemical response to the advocates of the Greek revival, then coming into fashion, will lead into discussion of the key philosophical debates and aesthetic shifts of the time, notably the emergence of the notion of the sublime as a category eventually subservive of western ideals of rationality and still present -- and potent -- in our own culture. Finally we will place Piranesi within a current of discussion of the origins and nature of language and of human society in general, not least as manifested in architecture and other symbolic practices. The leading figure here is the Neapolitan G.B. Vico, whose New Science of 1725 remains one of the most stimulating texts in the western intellectual tradition. Offered as ARTH 340, COGS 340, WLIT 340, CLSC 440, and WLIT 440.

CLSC 381. Classics Senior Capstone. 3 Units.
The capstone is the final requirement of the SAGES program and is normally taken in the fall semester of senior year. It involves an independent study paper resulting from exploration of a topic chosen in consultation with the student's capstone advisor, who will regularly review progress on the project. In the capstone students employ, integrate, and demonstrate analytical, rhetorical, and practical skills developed and honed through the SAGES curriculum as well as their major or minor studies. The Capstone Project has both a written and an oral component: oral presentation and argumentation will be stressed. The product of the capstone may take different forms: there will always be a written component, but other forms of expression are also encouraged, such as a webpage or poster for a poster session. As for the kind of project that might be done: students interested in literature might work on an annotated translation of a classical text; archaeology students might produce a virtual exhibit centered on a specific site or problem. Counts as SAGES Senior Capstone. Prereq: CLSC 111 and CLSC 112, plus courses prescribed for each track of the major.
CLSC 382. Senior Honors Thesis. 3 Units.
A course of independent study and research culminating in the preparation of a thesis on a topic approved by the supervising faculty member. Enrollment in this course must be approved by the Chair of the Department. Prereq: CLSC 381.

CLSC 395. Directed Readings. 1 - 3 Unit.
Readings in English on a topic of interest to the student and acceptable to the instructor. Designed and completed under the supervision of the instructor with whom the student wishes to work.

CLSC 416. Greek Tragedy. 3 Units.
This course provides students the opportunity to read a significant number of ancient Greek tragedies in modern English translations. We shall read, study, and discuss selected works by Aeschylus, Sophocles, and Euripides, and attempt to understand the plays as literature composed for performance. We shall study literary elements within the plays and theatrical possibilities inherent in the texts. As we read the plays, we shall pay close attention to the historical context and look for what each play can tell us about myth, religion, and society in ancient Athens. Finally, we shall give occasional attention to the way these tragic dramas and the theater in which they were performed have continued to inspire literature and theater for thousands of years. Lectures will provide historical background on the playwrights, the plays, the mythic and historical background, and possible interpretation of the texts as literature and as performance pieces. Students will discuss in class the plays that they read. The course has three examinations and a final project that includes a short essay and a group presentation. Offered as CLSC 316, WLIT 316, WLIT 416.

CLSC 418. Landscape Archaeology and Epigraphy. 3 Units.
Landscape archaeology addresses the complex ways that people have consciously and unconsciously shaped the land around them. As by-products of the interaction between people and place, landscapes designate spaces occupied by specific social groups whose members draw from their environs a shared identity and who situate their actions within specific normative frameworks. The landscapes of the Greek and Roman East are no exception to this. As "cultural landscapes," they were the scene of thousands of years of actions, including the organizing of space or the altering of the land for diverse purposes such as subsistence, or for economic, social, political, religious and military concerns. As such they offer us the possibility to investigate the agencies, actions, and negotiations between particular communities and the various greater powers that exercised control over them. This course will, therefore, introduce students to the study of Landscape Archaeology/Intensive Surveying through five weeks of hands-on fieldwork in the region of Isparta, Turkey, the locus of an ancient landscape called Northwestern Pisidia about which little is known. This landscape has a long storied past, lying as it did along a fault line between earthshaking empires, including the Hittites, Lydians and Persians to North and to the East, and the Greeks, Macedonians and Romans to the West. As such it was a contested space, not only in terms of the physical control of the land, but also the culture. This course will investigate this cultural landscape through the analysis of the archaeological material found. There will also be an opportunity to work with the archaeological material in the Isparta Museum, especially the epigraphical material there. We will also take field trips to important ancient sites and museums in the area to better grasp the region's ancient cultural profile and context. In addition, we will discuss archaeological ethics, issues of cultural patrimony, the importance of teamwork, and the need to work side by side with the local community. Offered as CLSC 318 and CLSC 418.

CLSC 422. Roman Drama and Theater. 3 Units.
This course is designed as a continuation of and companion to CLSC/WLIT 316/416 Greek Tragedy in English Translation, although it may be taken without having taken, or before having taken, that course. Students in Roman Drama and Theater will read a significant number of ancient Roman plays in modern English translation and study non-literary theatrical entertainment of the Roman Republic and Empire, including mime and pantomime, gladiatorial shows, political speeches, courtroom drama, and various other spectacles. The dramatic texts that we shall study include the fragments of early Latin drama, selected comedies by Plautus and Terence, and the tragedies of Seneca, and the forensic speeches of statesman such as Cicero. We shall also consider Greek and Roman literature that comments on Roman theatrical practices. These works will be read for their literary merits and theatrical possibilities, while at the same time examining them for what they can tell us about Roma culture and society. Similarly, when studying the non-literary theatrical works we shall examine historical and theatrical context including archaeological evidence from theaters and amphitheaters and material remains (masks, depictions of actors and gladiators on vases, terra cotta lamps, mosaics, etc.). Finally, while the majority of the course focuses on drama originally written in Latin and theatrical entertainments performed in ancient Rome, the course will conclude with a survey of selected post-classical works indebted to the tradition of Roman drama and theater. Authors to be studied include Hrotsvitha, Marlowe, Shakespeare, Racine, Molière, and the legacy of Roman drama and theater in contemporary stage and cinema such as Sondheim's A Funny Thing Happened on the Way to the Forum. Thus a secondary concern will be to consider how and in what ways the legacy of Roman drama and theater has continued to shape the dramatic arts since antiquity. Offered as CLSC 322, CLSC 422, WLIT 322, and WLIT 422.

CLSC 423. Angels and Daimons: The Origins of Inspiration. 3 Units.
The age old myth of the pact with the devil is central to some of the masterpieces of Western literature. Goethe's poem is focused on the battle between good and evil, angelic and demonic as archetypes of humanity. The confrontation between the two forces illustrates the perennial dichotomy of creation vs. destruction (apocalypse). They represent the origin of life and its continuation even when the angelic has been defeated. The course will contain philosophical and literary readings that treat the opposition, and sometimes simultaneity, of angelic and daimonic. Plato and the Neo-Platonic tradition will be explored in the course as well as various readings from Middle Ages up to 18th century that address the issue of inspiration through contamination with the mysterious forces of the invisible world. Offered as CLSC 323, CLSC 423, WLIT 323 and WLIT 423.

CLSC 424. The Sublime and Grotesque in Literature. 3 Units.
Early on in Western culture the question of sublime and grotesque was addressed by philosophers and writers. Aristotle and especially Longinus initiated the debate over what exactly made a work of art "sublim" or "Grotesque." This debate eventually in the 18th century gave birth to the discipline of aesthetics, which is one of the main foci of this course. To that end, in this course we will examine a few literary works in light of the most representative theories around the concept of sublime and grotesque: Aristotle, Longinus, Kant, Burke, Baumgarten, Nietzsche and Kierkegaard. Their theories will be applied to some of the most celebrated literary masterpieces written by Homer, Ovid, Dante, Cervantes and others. Offered as CLSC 324, CLSC 424, WLIT 324 and WLIT 424.
CLSC 426. Rome on Site: The Archaeology of the Eternal City. 3 Units.
This course offers the opportunity to examine firsthand Roman remains spanning 500 years of the city's history. For three weeks we will explore all sections of Rome and discover how different spheres of Roman life, such as religion, politics, leisure, and death, combined to shape one of the most renowned cityscapes of the ancient Mediterranean world. The course constitutes a mix of museum and site visits to expose us to the artifacts that help us interpret the Roman world, including art and other types of material culture, and the monumental architecture dominating much of Rome to this day. We will also explore important sites outside of the city, including Rome's remarkably well-preserved port at Ostia, the Emperor Hadrian's magnificent villa at Tivoli, and an optional visit to Pompeii and Herculaneum during an extended weekend. Some of the questions we will be asking when visiting the sites include: How did the expansion of the Roman Empire influence the stylistic repertoires of the capital's artists and architects? How did the changing political environment shape the topography of the city from Republic to Empire? How can we read political messages and propaganda in the ancient structures? How did (and does) Rome live among, use, and reuse ancient remains? Students will be expected to be active participants in the daily tours. All students will be presenting on various structures as we come to them (topics to be assigned in advance of the trip). Graduate students are responsible for leading a day tour (with my assistance) - to create the itinerary and develop the thematic framework. Grades will be based on participation on site, presentations, and a paper. Offered as CLSC 326 and CLSC 426.

CLSC 427. The Parthenon Then and Now: New Discoveries, Old Problems and Reception. 3 Units.
The Parthenon is an icon of western art and culture. Over 250 year of scholarship on this world-renowned building have revealed many of its secrets, but numerous questions still remain. New finds on the Acropolis itself and elsewhere in Greece have shed light on some of these issues, and as a result new theories abound. This seminar offers an overview of the temple, its architecture and sculpture, and will investigate its place in the civic and religious ideology of classical Athens. The course will also trace the Parthenon's many post-classical permutations, into a Christian Church and an Islamic mosque, and its impact on later western art and architecture. Finally the class will debate the moral and ethical issue of the Elgin Marbles - to repatriate them to Greece or to retain them in the British Museum in perpetuity. Offered as ARTH 327, ARTH 427, CLSC 327, CLSC 427.

CLSC 430. Topics in Classical Tradition. 3 Units.
This course will examine facets and tendencies of cultural development in modern Europe and beyond which involve the engagement of historians, philosophers, literary authors and critics, artists, architects, and/or society in general with the classical world and its legacy. In some cases courses will be programmatically associated with special events, e.g., exhibitions in The Cleveland Museum of Art. No prerequisites have been included, but students taking this course should have completed intermediate humanities courses, preferably in CLSC/LATN/GREK as well as WLIT. Offered as CLSC 330 and CLSC 430.

CLSC 431. Dante and the Classical Tradition: Middle Ages into Modernity. 3 Units.
“Dante and the Classical Tradition” will introduce through the complex work of Dante the concept of classical tradition as an all-encompassing cultural term. Dante represents the grandiose example of the artist who seeks the complete synthesis between humanities and sciences and their incessant collaborative effort to broaden as much as possible the depths of human knowledge. Philosophy, Geography, Physics, Linguistics, Astronomy and Literature are steady landmarks in Dante's work through which he aims to speak about the necessity of ever maintaining continuity between all domains of human knowledge. Dante’s work proposes high levels of excellence and while the course's focus will be on his literary output the scientific interests and treatises he demonstrates will not be omitted during class discussion and bibliography included in the syllabus. Last but not least the focus will be on how we understand today the concept of classical tradition as a result of Dante's writings. Offered as CLSC 331, CLSC 431, WLIT 331 and WLIT 431.

CLSC 440. Seminar in Enlightenment Art and Literature: Piranesi and Vico. 3 Units.
This course explores aspects of the European eighteenth century as a transformative epoch in the history of western culture. Though the Enlightenment is usually associated especially with France, in this course we will focus on Italy, as the irresistible goal of travelers taking part in the "Grand Tour," and as a landscape of powerful ancient and modern architecture and artworks universally recognized as exemplary. In particular we will study one of the strangest and most fascinating visual artists of the period, the self-proclaimed architect Giovanni Battista Piranesi (1720-1778) famous no less now than in his own time for his fantastic prison engravings as well as his views of Rome, involving a radical rethinking of the city as a particular kind of inhabited as well as imagined space. Piranesi's polemical response to the advocates of the Greek revival, then coming into fashion, will lead into discussion of the key philosophical debates and aesthetic shifts of the time, notably the emergence of the notion of the sublime as a category eventually subversive of western ideals of rationality and still present -- and potent -- in our own culture. Finally we will place Piranesi within a current of discussion of the origins and nature of language and of human society in general, not least as manifested in architecture and other symbolic practices. The leading figure here is the Neapolitan G.B. Vico, whose New Science of 1725 remains one of the most stimulating texts in the western intellectual tradition. Offered as CLSC 340, COGS 340, WLIT 340, CLSC 440, and WLIT 440.

CLSC 481. Special Studies. 1 - 6 Unit.
Subject matter varies according to need.

CLSC 492. Graduate Certificate Thesis. 3 Units.
This course will be focused on the independent writing of a substantial term paper under the supervision of an advisor. It is required for the completion of the Graduate Certificate.

CLSC 493. Graduate Certificate Presentation. 1 Unit.
This course will involve the presentation of the term paper completed and refined during CLSC 492. Prereq: CLSC 492.

GREK Courses

GREK 101. Elementary Greek I. 3 Units.
Beginning course in Greek language, covering grammar (forms and syntax) and the reading of elementary selections from ancient sources. Makes a start toward reading Greek authors.
GREK 102. Elementary Greek II. 3 Units.
Beginning course in Greek language, covering grammar (forms and syntax) and the reading of elementary selections from ancient sources. Makes a start toward reading Greek authors. Prereq: GREK 101 or equivalent.

GREK 201. Greek Prose Authors. 3 Units.
Readings from authors such as Plato, Lysias, Xenophon, and Herodotus. Offered as GREK 201, GREK 401, WLIT 201 and WLIT 401.

GREK 202. Introduction to Greek Poetry. 3 Units.
Primarily readings from Homer, Hesiod, and Theocritus. Selections from Greek lyric may be introduced at the instructor's discretion. Offered as GREK 202, GREK 402, WLIT 202, and WLIT 402. Prereq: GREK 102 or equivalent.

GREK 305. Readings in Ancient Philosophy: Plato. 3 Units.
Reading and interpretation of selected dialogues by Plato or other philosophical works. Offered as GREK 305 and GREK 405. Prereq: GREK 202 or equivalent.

GREK 306. Tragedy. 3 Units.
Reading and interpretation of selected plays of Aeschylus, Euripides, and Sophocles. Offered as GREK 306, GREK 406, WLIT 306, and WLIT 406. Prereq: 200-level GREK or equivalent.

GREK 307. History. 3 Units.
Extensive reading in Thucydides' History of the Peloponnesian War, especially Books VI and VII, the expedition against Syracuse. Offered as GREK 307, GREK 407, WLIT 307 and WLIT 407. Prereq: GREK 202 or equivalent.

GREK 308. Comedy. 3 Units.
Origin, ambiance, and development of Greek Old Comedy and persisting characteristics of the genre. Translation of selected plays from Greek into English. Offered as GREK 308, GREK 408, WLIT 318, and WLIT 418. Prereq: 200-level GREK or equivalent.

GREK 401. Greek Prose Authors. 3 Units.
Readings from authors such as Plato, Lysias, Xenophon, and Herodotus. Offered as GREK 201, GREK 401, WLIT 201 and WLIT 401.

GREK 402. Introduction to Greek Poetry. 3 Units.
Primarily readings from Homer, Hesiod, and Theocritus. Selections from Greek lyric may be introduced at the instructor's discretion. Offered as GREK 202, GREK 402, WLIT 202, and WLIT 402.

GREK 405. Readings in Ancient Philosophy: Plato. 3 Units.
Reading and interpretation of selected dialogues by Plato or other philosophical works. Offered as GREK 305 and GREK 405.

GREK 406. Tragedy. 3 Units.
Reading and interpretation of selected plays of Aeschylus, Euripides, and Sophocles. Offered as GREK 306, GREK 406, WLIT 306, and WLIT 406.

GREK 407. History. 3 Units.
Extensive reading in Thucydides' History of the Peloponnesian War, especially Books VI and VII, the expedition against Syracuse. Offered as GREK 307, GREK 407, WLIT 307 and WLIT 407.

GREK 408. Comedy. 3 Units.
Origin, ambiance, and development of Greek Old Comedy and persisting characteristics of the genre. Translation of selected plays from Greek into English. Offered as GREK 308, GREK 408, WLIT 318, and WLIT 418.

GREK 411. Homer. 3 Units.
Reading and translation of extensive selections from the Odyssey. Introduction to epic meter, to Homeric Greek, and to the poet's style. Consideration of evidences of oral composition and discussion of the heroic tradition. Offered as GREK 311, GREK 411, WLIT 311 and WLIT 411.

GREK 470. Greek Prose Composition. 3 Units.
This course introduces students to the principles and practice of composing continuous passages of Greek prose. It is designed to review and to strengthen students' command of Attic forms while becoming more aware of the ways Greek syntax was employed to express thought. Via practice at writing Greek prose, the ultimate goal is for the students to become more proficient and sensitive readers of ancient Greek. Offered as GREK 370, GREK 470, WLIT 370 and WLIT 470.

GREK 480. Advanced Topics in Greek Literature. 3 Units.
Study and discussion of important authors, works, and topics not covered regularly. Content will reflect particular interests of students and faculty and timeliness of the topics. Offered as GREK 380 and GREK 480.

GREK 495. Directed Readings. 1 - 3 Unit.
Readings in Greek of authors selected to serve the individual interests and needs of undergraduate students. Each program planned and completed under the supervision of the instructor with whom the student wishes to work. Offered as GREK 395 and GREK 495.

LATN Courses
LATN 101. Elementary Latin I. 3 Units.
An introduction to the elements of Latin: pronunciation, forms, syntax, vocabulary, and reading.

LATN 102. Elementary Latin II. 3 Units.
An introduction to the elements of Latin: pronunciation, forms, syntax, vocabulary, and reading. Prereq: LATN 101 or equivalent.

LATN 201. Latin Prose Authors. 3 Units.
Reading and discussion of such prose authors as Cicero, Caesar, Livy or Pliny. Offered as LATN 201, LATN 401, WLIT 241 and WLIT 441. Prereq: LATN 102 or equivalent.
LATN 202. Vergil. 3 Units.
Primarily readings from The Aeneid; selections from Vergil's other work may be introduced at instructor's discretion. Recommended preparation: LATN 201 or equivalent. Offered as LATN 202, LATN 402, WLIT 232 and WLIT 432.

LATN 305. Literature of the Republic. 3 Units.
A reading course in prose and poetry of the Roman Republic. Extensive selections from Cicero and Catullus, and one comedy of Terence. Offered as LATN 305, LATN 405, WLIT 334, and WLIT 434. Prereq: 200-level LATN or equivalent.

LATN 306. Survey of Latin Literature. 3 Units.
Reading and discussion of selections from the various genres of Latin literature of the Roman Republic and Empire such as historical narrative, lyric and elegiac poetry, comic drama, forensic rhetoric, philosophical dialogue, didactic literature, letters, and epigrams. Offered as LATN 306, LATN 406, WLIT 346, and WLIT 446. Prereq: 200-level LATN or equivalent.

LATN 307. Livy. 3 Units.
Readings in Books I and XXI, with other selections from this major Augustan historian. Offered as LATN 307, LATN 407, WLIT 347, and WLIT 447. Prereq: 200-level LATN or equivalent.

LATN 308. Horace: Odes and Epodes. 3 Units.
Readings and discussion of extensive selections from the poetry of Horace; consideration of Horace as exemplifying the spirit of the Augustan Age. Offered as LATN 308, LATN 408, WLIT 348, and WLIT 448. Prereq: 200-level LATN or equivalent.

LATN 309. Medieval Latin. 3 Units.
Reading and interpretation of Latin texts from the Middle Ages. Material selected according to the needs and interests of students. Offered as LATN 309, LATN 409, WLIT 349, and WLIT 449. Prereq: 200-level LATN or equivalent.

LATN 351. Latin Didactic Literature. 3 Units.
Readings from didactic poetry such as Lucretius and Vergil's Georgics. Parodies like Ovid's Ars Amatoria or prose treatises may also be introduced. Offered as LATN 351, LATN 451, WLIT 351, and WLIT 451. Prereq: 200-level LATN or equivalent.

LATN 306. Survey of Latin Literature. 3 Units.
Readings and discussion of selections from the various genres of Latin literature of the Roman Republic and Empire such as historical narrative, lyric and elegiac poetry, comic drama, forensic rhetoric, philosophical dialogue, didactic literature, letters, and epigrams. Offered as LATN 306, LATN 406, WLIT 346, and WLIT 446. Prereq: 200-level LATN or equivalent.

LATN 307. Livy. 3 Units.
Readings in Books I and XXI, with other selections from this major Augustan historian. Offered as LATN 307, LATN 407, WLIT 347, and WLIT 447. Prereq: 200-level LATN or equivalent.

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LATN 309. Medieval Latin. 3 Units.
Reading and interpretation of Latin texts from the Middle Ages. Material selected according to the needs and interests of students. Offered as LATN 309, LATN 409, WLIT 349, and WLIT 449. Prereq: 200-level LATN or equivalent.

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Readings from didactic poetry such as Lucretius and Vergil's Georgics. Parodies like Ovid's Ars Amatoria or prose treatises may also be introduced. Offered as LATN 351, LATN 451, WLIT 351, and WLIT 451. Prereq: 200-level LATN or equivalent.

LATN 352. History. 3 Units.
Works of the Roman historian Cornelius Tacitus; his Annals I-VI dealing with his portrait of Emperor Tiberius and the Empire after the death of Augustus. Offered as LATN 308, LATN 408, WLIT 348, and WLIT 448. Prereq: 200-level LATN or equivalent.

LATN 352. History. 3 Units.
Works of the Roman historian Cornelius Tacitus; his Annals I-VI dealing with his portrait of Emperor Tiberius and the Empire after the death of Augustus. Offered as LATN 308, LATN 408, WLIT 348, and WLIT 448. Prereq: 200-level LATN or equivalent.

LATN 353. Drama. 3 Units.
Reading of at least one play each by Plautus and Terence. Attention to the history of Latin and Greek New Comedy, and the contrasting styles of the two authors. Offered as LATN 354, LATN 454, WLIT 354, and WLIT 454. Prereq: 200-level LATN or equivalent.

LATN 354. Drama. 3 Units.
Reading of at least one play each by Plautus and Terence. Attention to the history of Latin and Greek New Comedy, and the contrasting styles of the two authors. Offered as LATN 354, LATN 454, WLIT 354, and WLIT 454. Prereq: 200-level LATN or equivalent.

LATN 356. Elegiac Poetry. 3 Units.
In this course we shall translate and interpret selected elegies by Catullus, Tibullus, Propertius, and Ovid. We will also devote considerable class time to the reading and in-depth analysis of the major secondary literature, starting with the introductory pieces in the newest companions published by Brill and Cambridge, and moving on to fundamental articles and perhaps even a full scholarly monograph. Offered as LATN 356, LATN 456, WLIT 336, and WLIT 436. Prereq: 200-level LATN or equivalent.

LATN 370. Latin Prose Composition. 3 Units.
This course is designed to strengthen students' active command of Latin grammar and idiomatic prose style. At a basic level, students are trained to pay attention to details and thus write grammatically correct. Going beyond this, the course teaches Latin Idioms. Finally, it aims to develop students' intuitive feeling for the Latin language. The ultimate goal is to write in a Ciceronian prose style. Offered as LATN 370, LATN 470, WLIT 380, and WLIT 480. Prereq: 200-level LATN or equivalent.

LATN 380. Advanced Topics in Latin Literature. 3 Units.
Study and discussion of important authors, works, and topics not covered regularly. Content will reflect particular interests of students and faculty and timeliness of topics. Offered as LATN 380 and LATN 480. Prereq: 200-level LATN or equivalent.

LATN 395. Directed Readings. 1 - 3 Unit.
Directed readings in Latin of authors selected to serve the individual interests and needs of undergraduate students. Each program planned and completed under the supervision of the instructor with whom the student wishes to work. Offered as LATN 395 and LATN 495.

LATN 401. Latin Prose Authors. 3 Units.
Reading and discussion of such prose authors as Cicero, Caesar, Livy or Pliny. Offered as LATN 201, LATN 401, WLIT 241 and WLIT 441.

LATN 402. Vergil. 3 Units.
Primarily readings from The Aeneid; selections from Vergil's other work may be introduced at instructor's discretion. Recommended preparation: LATN 201 or equivalent. Offered as LATN 202, LATN 402, WLIT 232 and WLIT 432.

LATN 405. Literature of the Republic. 3 Units.
A reading course in prose and poetry of the Roman Republic. Extensive selections from Cicero and Catullus, and one comedy of Terence. Offered as LATN 305, LATN 405, WLIT 334, and WLIT 434.

LATN 406. Survey of Latin Literature. 3 Units.
Reading and discussion of selections from the various genres of Latin literature of the Roman Republic and Empire such as historical narrative, lyric and elegiac poetry, comic drama, forensic rhetoric, philosophical dialogue, didactic literature, letters, and epigrams. Offered as LATN 306, LATN 406, WLIT 346, and WLIT 446.

LATN 407. Livy. 3 Units.
Readings in Books I and XXI, with other selections from this major Augustan historian. Offered as LATN 307, LATN 407, WLIT 347, and WLIT 447.

LATN 408. Horace: Odes and Epodes. 3 Units.
Readings and discussion of extensive selections from the poetry of Horace; consideration of Horace as exemplifying the spirit of the Augustan Age. Offered as LATN 308, LATN 408, WLIT 348, and WLIT 448. Prereq: 200-level LATN or equivalent.

LATN 409. Medieval Latin. 3 Units.
Reading and interpretation of Latin texts from the Middle Ages. Material selected according to the needs and interests of students. Offered as LATN 309, LATN 409, WLIT 349, and WLIT 449. Prereq: 200-level LATN or equivalent.

LATN 451. Latin Didactic Literature. 3 Units.
Readings from didactic poetry such as Lucretius and Vergil's Georgics. Parodies like Ovid's Ars Amatoria or prose treatises may also be introduced. Offered as LATN 351, LATN 451, WLIT 351, and WLIT 451. Prereq: 200-level LATN or equivalent.

LATN 452. History. 3 Units.
Works of the Roman historian Cornelius Tacitus; his Annals I-VI dealing with his portrait of Emperor Tiberius and the Empire after the death of Augustus. Offered as LATN 352, LATN 452, WLIT 352, and WLIT 452.
LATN 454. Drama. 3 Units.
Reading of at least one play each by Plautus and Terence. Attention to the history of Latin and Greek New Comedy, and the contrasting styles of the two authors. Offered as LATN 354, LATN 454, WLIT 354, and WLIT 454.

LATN 456. Elegiac Poetry. 3 Units.
In this course we shall translate and interpret selected elegies by Catullus, Tibullus, Propertius, and Ovid. We will also devote considerable class time to the reading and in-depth analysis of the major secondary literature, starting with the introductory pieces in the newest companions published by Brill and Cambridge, and moving on to fundamental articles and perhaps even a full scholarly monograph. Offered as LATN 356, LATN 456, WLIT 336, and WLIT 436.

LATN 470. Latin Prose Composition. 3 Units.
This course is designed to strengthen students’ active command of Latin grammar and idiomatic prose style. At a basic level, students are trained to pay attention to details and thus write grammatically correct. Going beyond this, the course teaches Latin idioms. Finally, it aims to develop students’ intuitive feeling for the Latin language. The ultimate goal is to write in a Ciceronian prose style. Offered as LATN 370, LATN 470, WLIT 380, and WLIT 480.

LATN 480. Advanced Topics in Latin Literature. 3 Units.
Study and discussion of important authors, works, and topics not covered regularly. Content will reflect particular interests of students and faculty and timeliness of topics. Offered as LATN 380 and LATN 480.

LATN 495. Directed Readings. 1 - 3 Unit.
Directed readings in Latin of authors selected to serve the individual interests and needs of undergraduate students. Each program planned and completed under the supervision of the instructor with whom the student wishes to work. Offered as LATN 395 and LATN 495.

Department of Cognitive Science

Cognitive science is the scientific study of the mind in a transdisciplinary framework. The Department of Cognitive Science at Case Western Reserve University is specifically dedicated to the study of human higher cognition, including language, gesture, advanced social cognition, mathematical invention, scientific discovery, art, religion, music, literature, advanced tool use and advanced technology, theater and dance, fashions of dress, sign systems, creativity, and culture. The department draws on methods of research in the biological sciences, the social sciences, and the humanities. Its educational mission is to provide students with the best possible opportunity to integrate a wide variety of approaches and apply them to the study of human higher cognition.

The department provides basic training in core disciplines, as well as in a range of philosophical, evolutionary, linguistic, and computational issues bearing on cognitive science. It seeks to place cognitive science in a wider, more ecologically valid context than traditional programs in this field have typically allowed, so as to broaden our theories of those high-end cognitive capacities that mark human beings as distinctive.

The department offers an undergraduate major and minor in cognitive science and a master’s degree in cognitive linguistics. By developing wide-ranging expertise in at least two or three relevant disciplines, our students can prepare for a variety of career options. Training in several disciplines will also provide increased choices for postgraduate study.

Undergraduate Programs

Major
In addition to meeting general education requirements, cognitive science majors must complete a minimum of 30 semester hours in cognitive science and approved related course work: 15 hours in the foundation component and 15 hours of elective course work. The foundation courses provide all students with a common basis for further study. They consist of:

COGS 101 Introduction to Cognitive Science 3
COGS 102 Introduction to Cognitive Neuroscience 3
COGS 201 Human Cognition in Evolution and Development 3
COGS 202 Human Cognition Viewed from a Cultural Perspective 3
One of the following quantitative methods courses: 3
ANTH 319 Introduction to Statistical Analysis in the Social Sciences
PSCL 282 Quantitative Methods in Psychology
STAT 201 Basic Statistics for Social and Life Sciences
Five elective courses (three must be at the 200 or 300 level) 15
Total Units 30

Minor
The minor requires students to take the following:

COGS 101 Introduction to Cognitive Science 3
One of the following: 3
COGS 102 Introduction to Cognitive Neuroscience
COGS 201 Human Cognition in Evolution and Development
COGS 202 Human Cognition Viewed from a Cultural Perspective
Three COGS courses at the 200 or 300 level 9
Total Units 15

The minor provides a good basic grounding in cognitive science, and allows students to narrow their exposure to those aspects of the field most relevant to their other academic interests. Individual programs can be developed in consultation with the chair of the department.

Graduate Program

MA in Cognitive Linguistics

“Cognitive linguistics goes beyond the visible structure of language and investigates the considerably more complex backstage operations of cognition that create grammar, conceptualization, discourse, and thought itself. The theoretical insights of cognitive linguistics are based on extensive empirical observation in multiple contexts, and on experimental work in psychology and neuroscience. Results of cognitive linguistics, especially from metaphor theory and conceptual integration theory, have been applied to wide ranges of nonlinguistic phenomena.”


Candidates may apply for admission to the degree program in cognitive linguistics with the purpose of pursuing the MA, or for non-degree status with the purpose of taking courses for credit that can be transferred to other institutions. The MA follows Plan A as described in the School of Graduate Studies (http://bulletin.case.edu/schoolofgraduatestudies/
academic requirements) section of this bulletin. Accordingly, it requires 30 credit hours and a written MA thesis.

**Department Faculty**

William Deal, PhD  
(Harvard University)  
*Severance Professor in the History of Religion and Chair  
Cognitive science of religion*

Todd Oakley, PhD  
(University of Maryland)  
*Professor  
Cognitive linguistics; discourse analysis; attention*

Fey Parrill, PhD  
(University of Chicago)  
*Associate Professor  
Language and co-speech gesture*

Vera Tobin, PhD  
(University of Maryland)  
*Assistant Professor  
Cognitive linguistics, pragmatics, literature; evolution & development*

Mark Turner, PhD  
(University of California, Berkeley)  
*Institute Professor  
Higher-order cognition and creativity; conceptual integration*

Robert L. Greene, PhD  
(Yale University)  
*Professor, Department of Psychological Sciences*

Sandra Russ, PhD  
(University of Pittsburgh)  
*Distinguished University Professor and Louis D. Beaumont University  
Professor, Department of Psychological Sciences*

Peter Thomas, PhD  
(University of Chicago)  
*Associate Professor, Department of Mathematics, Applied Mathematics, and Statistics*

Peter J. Whitehouse, MD, PhD  
(Johns Hopkins University)  
*Professor, Department of Neurology, School of Medicine*

Stuart Youngner, MD  
(Case Western Reserve University)  
*Professor, Department of Bioethics, School of Medicine*

**Adjunct Faculty**

Per Aage Brandt, Doctorat d'Etat  
(Sorbonne I, Paris)

Merlin W. Donald, PhD  
(McGill University)

Yohannes Haile-Selassie, PhD  
(University of California, Berkeley)  
*Curator and Head of Physical Anthropology, Cleveland Museum of Natural History*

Paul Marasco, PhD  
(Vanderbilt University)  
*Principal Investigator in the Advanced Platform Technology Center at the Louis Stokes Department of Veterans Affairs Medical Center*

Kristina Hooper Woolsey, PhD  
(University of California, San Diego)

**Secondary Faculty**

Florin Berindeanu, PhD  
(University of Georgia)  
*Instructor, Department of Classics*

Richard J. Boland, Jr., PhD  
(Case Western Reserve University)  
*Professor, Department of Information Systems, Weatherhead School of Management*

Richard E. Boyatzis, PhD  
(Harvard University)  
*Professor, Department of Organizational Behavior, Weatherhead School of Management*

Daniela Calvetti, PhD  
(University of North Carolina, Chapel Hill)  
*James Wood Williamson Professor, Department of Mathematics, Applied Mathematics, and Statistics*

Angela Ciccia, PhD  
(Case Western Reserve University)  
*Assistant Professor, Department of Psychological Sciences*

Fred Collopy, PhD  
(Wharton School of the University of Pennsylvania)  
*Professor, Department of Information Systems, Weatherhead School of Management*

Heath A. Demaree, PhD  
(Virginia Institute of Technology)  
*Professor, Department of Psychological Sciences*

Robert L. Greene, PhD  
(Yale University)  
*Professor, Department of Psychological Sciences*

Sandra Russ, PhD  
(University of Pittsburgh)  
*Distinguished University Professor and Louis D. Beaumont University  
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(University of Chicago)  
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Peter J. Whitehouse, MD, PhD  
(Johns Hopkins University)  
*Professor, Department of Neurology, School of Medicine*

Stuart Youngner, MD  
(Case Western Reserve University)  
*Professor, Department of Bioethics, School of Medicine*

**Courses**

**COGS 101. Introduction to Cognitive Science. 3 Units.**

This course introduces students to the field of cognitive science. Cognitive scientists are interested in the nature of the human mind--basically, we ask how humans think. This is a huge question, and has been addressed in one way or another by pretty much every academic field. Cognitive science tries to unite work from many different fields, including computer science, neuroscience, psychology, linguistics, philosophy, music, art, and literary theory. In this course, you'll get a basic introduction to some of the topics that are central to human cognition, such as intelligence, categorization, language, and creativity. We'll ask what can be gained by taking an integrated, cognitive scientific approach to these topics.
COGS 102. Introduction to Cognitive Neuroscience. 3 Units.
A survey of the fundamental methods, findings, and theories that attempt to understand the human mind from a neuroscientific standpoint. The course provides the student with background knowledge of brain processes underlying such psychological phenomena as consciousness, sensation, perception, thought, language, and voluntary action. Since many fields of neuroscience have contributed to cognitive neuroscience, the approach of this course is cross-disciplinary. It introduces theories and data from clinical and experimental neuropsychology, brain imaging, neuroelectric and neuromagnetic brain activity, the neuroscience of language, and behavioral neuroscience, among other fields.

COGS 201. Human Cognition in Evolution and Development. 3 Units.
COGS 201 covers mind unfolding in time, including the fundamental methods, findings, and theories of human mental phylo- and ontogenesis. It provides the student with background knowledge about the unfolding of cognitive structures and functions over time, in both the deep temporal perspective of evolution (measured across many lifetimes) and the shorter one of development (measured within single lifetimes). The approach of the course is cross-disciplinary, including approaches that come from anthropology, archaeology, philosophy, computing science, comparative psychology, primatology, and comparative linguistics, among others.

COGS 202. Human Cognition Viewed from a Cultural Perspective. 3 Units.
This course studies the human mind in its natural environment: culture. It covers the fundamental methods, findings, and theories that attempt to understand the growth and evolution of cognition from either a social science or humanistic standpoint. It provides the student with background knowledge of theories of human cultural evolution and change, of the relationship between the cognizing individual and larger social-cognitive structures, and of such phenomena as distributed networks, cooperative mental work, and the phenomenology of human experience. Many disciplines have contributed to this knowledge; hence the approach of this course is cross-disciplinary, including ideas from cultural anthropology, literary studies, art and art history, musicology, philosophy, and the history of technology, among others.

COGS 205. Cognition and Design. 3 Units.
Urbanism is design; architecture is design; of course, the aesthetic shaping of artifacts (such as computers, cars, and coffee machines) is design. Configuring surfaces, volumes, and portions of space in special ways, creating and changing formats for things and places that allow cultural practices to unfold while delimiting them, are essential ‘designing’ endeavors of human civilization and are, necessarily, activities based on the cognitive capacities and constraints of our species. We ‘cognize’ the human world in terms and frames of ‘designed’ surroundings. Design is a basic expressive activity, by which we interact with our artificial and natural surroundings and create ‘interfaces’ between mind and reality, thus upholding and interpretable world. Landscapes and cityscapes, work spaces of all sorts, buildings and parks, exteriors and interiors of homes, factories, institutions, and temples; furniture, artifacts such as machines, tools, weapons, symbolic objects, even the configuration (‘building’) of our own bodies, are design. An inquiry into cultural cognition, aiming to understand how humans as socio-cultural beings think and feel, therefore needs to explore this dimension of spatial expressivity and to acknowledge it as a constitutive fact of human meaning production; it needs to study the aesthetic and pragmatic, political and historical, philosophical and religious, and simply everyday practical, semiotic aspects of this basic form of human creativity. This course will focus on spatial expressivity--design--in several primary keys and scales, including design for learning; design for verbal and technical communication, interaction, and commerce; design for expressions of authority and deliberation; and design for emotional display.

COGS 206. Theory of Cognitive Linguistics I. 3 Units.
This is the first course in a two-course sequence presenting theory and practice of cognitive linguistics. Offered as COGS 206 and COGS 406.

COGS 272. Morality and Mind. 3 Units.
Recent research in cognitive science challenges ethical perspectives founded on the assumption that rationality is key to moral knowledge or that morality is the product of divine revelation. Bedrock moral concepts like free will, rights, and moral agency also have been questioned. In light of such critiques, how can we best understand moral philosophy and religious ethics? Is ethics primarily informed by nature or by culture? Or is ethics informed by both? This course examines 1) ways in which cognitive science--and related fields such as evolutionary biology--impact traditional moral perspectives, and 2) how the study of moral philosophy and comparative ethics forces reconsideration of broad cognitive science theories about the nature of ethics. The course examines the concept of free will as a case study in applying these interpretive viewpoints. Interdisciplinary readings include literature from moral philosophy, religious ethics, cognitive science, and evolutionary biology. Offered as COGS 272, RLGN 272.

COGS 301. Special Topics in Cognitive Science. 3 Units.
Special Topics in Cognitive Science. Topics vary. Permission of department is required. Offered as COGS 301 and COGS 401.

COGS 302. SAGES Departmental Seminar: Methods and Theories in Cognitive Science. 3 Units.
This course takes a look at the discipline of cognitive science by exploring the methods that cognitive scientists use in their research. We'll discuss how different methods reflect different approaches and traditions of thought and how they provide different answers to particular questions. We'll also discuss the process of translating research into writing and talk about how different kinds of writing reflect the many different methods used in cognitive science. Recommended preparation: COGS 101, COGS 102, COGS 201, COGS 202. Counts as SAGES Departmental Seminar.
COGS 305. Departmental Seminar: Moral Boundaries and Limits of Science. 3 Units.
Cognitive Science is essentially interdisciplinary, and this seminar will focus on deep issues that lie at the intersection between science and philosophy. The class will explore how, and to what extent, science might both shape our ethical judgments and help us to understand them. We will also consider what, if anything, our deep moral intuitions, as evidenced by strong sentiments such as disgust or repugnance, tell us about the nature of morality. Current scholarship in moral psychology, moral neuroscience, and moral philosophy are shedding new light on these issues. We will focus on moral boundaries: distinctions between things that have powerful ethical and emotional significance, at least for some people. We will consider the following boundaries: - Male/ female and moral responses to homosexuality; - Human/animal and moral responses to bestiality and stem cell research that inserts human stem cells into animals; - Life/death and moral responses to euthanasia; - Human/machine and the moral responses to artificial intelligence, robots, and the use of steroids to enhance athletes and warfighters. In addition to learning and writing about relevant psychological and neuroscientific research, the course contains two other essential aspects. First, students will engage with relevant philosophical issues and arguments. Are there moral facts? If so, what is their basis? Second, the course will include experiential aspects—students will be asked to examine their own ethical responses, and to reexamine them in light of what they are learning. Recommended Preparation: (any two of following pre-requisites) COGS 101, COGS 102, COGS 201, COGS 202. Counts as SAGES Departmental Seminar.

COGS 307. Cog Linguistics Theory II. 3 Units.
This is the second course in a two-course sequence presenting theory and practice of cognitive linguistics. Offered as COGS 307 and COGS 407. Counts as SAGES Departmental Seminar.

COGS 308. Advanced Research Workshop I. 3 Units.
This course is an advanced research workshop for undergraduates and MA students. The workshop involves development of research topics (theoretical or empirical), and working on them with the input of other workshop members to produce final papers. Offered as COGS 308 and COGS 408.

COGS 309. Advanced Research Workshop II. 3 Units.
This course is an advanced research workshop for undergraduates and MA students. The workshop involves development of research topics (theoretical or empirical), and working on them with the input of other workshop members to produce final papers. MA students in cognitive linguistics will typically take this course as the second part of a two-part sequence. Offered as COGS 309 and COGS 409.

COGS 310. Cognitive Science of Religion. 3 Units.
This course introduces theories and methods in the cognitive science of religion. Particular emphasis is placed on applying cognitive scientific concepts and theories to such religious issues as belief in deities, religious ritual, and morality. We examine such topics as the relationship of religious studies to evolution and cognition, cognitive theories or religious ritual, anthropomorphism and religious representation, religion as an evolutionary adaptation, and cognitive semantics and religious language. Course work includes student-led discussions, a research-intensive journal-length essay on a topic chosen in consultation with the Instructor, and presentation of research findings to the class. Course readings are taken from the humanities, the social sciences, and natural sciences. Offered as: COGS 310, COGS 410, RLGN 310, RLGN 410.

COGS 311. Mind and Media. 3 Units.
An introduction to the study of mind and media, including the study of multimodal communication. This course investigates patterns of human cognition that are ancient to human beings and upon which media have converged for powerful, immersive effect. The cognitive processes studied include perception, sensation, imagination, joint attention, narrative conception, simulation, dreaming, identity construction, imaginative play, and implicit learning. Students engage in hands-on media analysis to study how basic human mental operations are used in media to achieve a variety of effects. Students will be given access to a private website of instructions, readings, and materials for the course, and will be introduced to a range of vast, rich, searchable databases of media. Students will have ample opportunity to do research inside such databases. Offered as: COGS 311 and COGS 411.

COGS 312. Second Language Acquisition I. 3 Units.
This course is an introduction to the growing field of second language acquisition (SLA). SLA seeks to understand the linguistic, psychological and social processes that underlie the learning and use of second language(s). The goal of research is to identify the principles and processes that govern second language learning and use. SLA is approached from three perspectives in the course: 1) as linguistic knowledge; 2) as a cognitive skill; and 3) as a socially and personality-mediated process. Important factors in second language learning will be identified and discussed. These include: age-related differences, the influence of the first language, the role played by innate (universal) principles, the role of memory processes, attitudes, motivation, personality and cognitive styles, and formal versus naturalistic learning contexts. The objective of this course is to survey the principal research in second language acquisition. Students will become familiar with the major research issues through their reading of both primary and secondary sources, as well as through lectures and class discussions. Offered as COGS 312, COGS 412, LING 301 and LING 401.

COGS 313. Special Topics in Cognitive Linguistics. 3 Units.
This course covers special topics in the field of cognitive linguistics. Topics will vary from semester to semester. Offered as COGS 313 and COGS 413.

COGS 315. Mental Space Theory. 3 Units.
This course covers theory of mental spaces and methodology of mental space analysis, with special emphasis on the use of mental space theory to analyze human performance in various areas of cognition, including reasoning, judgment, decision, counterfactual thought, inference, planning, communication and language, gesture, social cognition, cognitive design and engineering, representation, learning, humor, symbol systems, and invention. It includes a consideration of experimental methods that have arisen under the influence of mental space theory. A student may earn credit for either COGS 315 or COGS 415, but not both. Offered as COGS 315 and COGS 415.
COGS 316. Decision-Making. 3 Units.
This course is a topical introduction to decision-making, a major area of cognitive social science, with connections to economics, law, political science, business, policy, and related fields. Topics include game theory and rational calculation, equilibria, kinds of choice, heuristics, the role of affect in decision, framing, bounded rationality, mechanisms of choice such as heuristics, the role of social cognition in choice, concepts of self and other, and computer modeling of choice. The course also includes an introduction to the design of empirical behavioral research. Offered as COGS 316 and COGS 416.

COGS 317. Cognitive Diversity. 3 Units.
This course surveys research from cognitive science (psychology, linguistics, neuroscience, etc.) on the ways that different people think differently. We will consider dimensions such as sex, gender, sexual orientation, race/ethnicity, bodily differences, cultural differences, and effects of speaking different languages. Students will choose the last two topics at the end of the semester (Different religions? Different ages? Whatever interests the class!). Offered as COGS 317 and COGS 417.

COGS 318. Thinking Communication in Ancient and Medieval Literature. 3 Units.
The ancients were much concerned with the nature and validity of signs: Important decisions depended on the flight of birds or the coloration of the liver of a sacrificial victim. The relationship of language to truth, i.e., a reality beyond the contingent, was a crucial issue, not least because of the rise of sophistic rhetoric: for an orator, language was a tool in a contest rather than a means to true understanding. The discipline of medicine, developed by such important figures as Galen and Hippocrates, depended on the interpretation of physical signs to diagnose and treat ailments of mind and body. The term for the theory of signs--semiotics--is derived from the Greek term "semeiotike," and for many Greek philosophers and their Roman and medieval successors the sign was a key issue. For Christians especially, new forms of vision and discerning truth presented particular problems: after all, the Christian God revealed his intentions through "portents" that had to be read and interpreted. And even if sacred scripture was in some way understood as encapsulating the whole word, there were countless passages requiring clarification or adaptation to contemporary situations. In other words, the concern was with the relationship between a universe of structured signs (the subject of semiotics) and structures of interpersonal communication (pragmatics). Offered as CLSC 313 and COGS 318. Prereq: WLIT 211 or WLIT 212.

COGS 322. Human Learning and the Brain. 3 Units.
This course focuses on the question, "How does the human brain learn?" Through assigned readings, extensive class discussions, and a major paper, each student will explore personal perspectives on learning. Specific topics include, but are not limited to: the brain's cycle of learning; neocortex structure and function; emotion and limbic brain; synapse dynamics and changes in learning; images in cognition; symbolic brain (language, mathematics, music); memory formation; and creative thought and brain mechanisms. The major paper will be added to each student's SAGES writing portfolio. In addition, near the end of the semester, each student will make an oral presentation on a chosen topic. Offered as BIOL 302 and COGS 322. Counts as SAGES Departmental Seminar.

COGS 325. Cognitive Approaches to Literature. 3 Units.
This course approaches literature as a window into language, in which cognition is characterized by the same imaging and imaginary properties as artistic literature. It is an attempt to identify and analyze procedures as aesthetically interesting and generally relevant forms of human thinking, feeling, imagining, fantasizing, and conceptualizing. The course introduces current theories of literature in relation to language and mind, and it presents and discusses practical applications in critical reading and text analysis, using examples from modern literature in the main genres. A student may earn credit for either COGS 325 or COGS 425 but not both. Recommended preparation: COGS 101, COGS 202. Offered as COGS 325 and COGS 425.

COGS 327. Gesture in Cognition and Communication. 3 Units.
Most people never notice that when they are talking, they're also gesturing. Why do we produce these gestures? What can studying them tell us about the human mind? This course surveys scientific research on gesture, exploring topics such as the role of gesture in communication, cross-cultural differences in gesture, and the relationship between gesture and signed languages. The course will focus on gestures produced with speech, but will cover symbolic and ritualized gesture in the visual arts and in dance. Offered as COGS 327 and COGS 427 and MLIT 327. Counts as SAGES Departmental Seminar.

COGS 328. Cognition and Visual Aesthetic Experience. 3 Units.
This course is offered as a reciprocal exchange between new research on the mind/brain and existing theories of visual aesthetics. It would appeal to students from diverse majors, ranging from art, language or philosophy, to psychology, computer science or pre-medicine. The material covered links a traditional approach to philosophical aesthetics with a most up-to-date research on visual perception and brain functioning. Recommended preparation: COGS 101, COGS 202.

COGS 329. Performance and the Embodied Mind. 3 Units.
In the past twenty years cognitive scientists working in neuroscience, psychology, linguistics, philosophy, and related fields have made great progress in understanding perception, empathy, the human mind's sense of space and movement, emotions, meaning-making, and many other cognitive areas that are crucial to producing, enacting, and responding to performances on stage. This course will look at ways of incorporating many of the insights of cognitive science into the existing work of theatre and performance scholarship. The course will thus link a more traditional approach to the body in theatre and dance studies, where it has commonly been considered one of the main means of communication, to a most up-to-date research on embodied cognition. Observation of live and pre-recorded dance and theatre performances will regularly be used to supplement the theoretical discussion. Recommended preparation: COGS 101, COGS 202.
COGS 340. Seminar in Enlightenment Art and Literature: Piranesi and Vico. 3 Units.
This course explores aspects of the European eighteenth century as a transformative epoch in the history of western culture. Though the Enlightenment is usually associated especially with France, in this course we will focus on Italy, as the irresistible goal of travelers taking part in the “Grand Tour,” and as a landscape of powerful ancient and modern architecture and artworks universally recognized as exemplary. In particular we will study one of the strangest and most fascinating visual artists of the period, the self-proclaimed architect Giovanni Battista Piranesi (1720-1778) famous no less now than in his own time for his fantastic prison engravings as well as his views of Rome, involving a radical rethinking of the city as a particular kind of inhabited as well as imagined space. Piranesi’s polemical response to the advocates of the Greek revival, then coming into fashion, will lead into discussion of the key philosophical debates and aesthetic shifts of the time, notably the emergence of the notion of the sublime as a category eventually subversive of western ideals of rationality and still present -- and potent -- in our own culture. Finally we will place Piranesi within a current of discussion of the origins and nature of language and of human society in general, not least as manifested in architecture and other symbolic practices. The leading figure here is the Neapolitan G.B. Vico, whose New Science of 1725 remains one of the most stimulating texts in the western intellectual tradition. Offered as CLSC 340, COGS 340, WLIT 340, CLSC 440, and WLIT 440.

COGS 349. Biocultural Approaches to Religion. 3 Units.
This course studies religious beliefs and rituals from a biocultural perspective. A biocultural approach to religion is based on the idea that human religiosity is informed by both our evolutionary biological makeup and by our ability to construct culture to adapt to variable social worlds and environments. According to a biocultural view, humans are biologically constrained but have the cultural capacity to adapt to the world in a variety of ways. Thus, a biocultural approach to religion asserts that biology and culture operate in tandem and that both biological and cultural insights are required in order to understand and explain religious beliefs and practices. This course explores these assumptions and examines them against specific religious data. This course introduces students to major ideas, concepts, and questions that motivate biocultural approaches to religion. The course requires students to apply course material to a final research project that explores particular religious beliefs and/or practices in terms of the intersection of cultural choices and biological constraints. Students will present their research findings to the class. Students who take this course under the COGS designation are expected to engage substantively with the contemporary scientific study of the human mind in their research project and other course work. Offered as RLGN 349, RLGN 449 and COGS 349.

COGS 352. Language, Cognition, and Religion. 3 Units.
This course utilizes theoretical approaches found in cognitive semantics -- a branch of cognitive linguistics -- to study the conceptual structures and meanings of religious language. Cognitive semantics, guided by the notion that conceptual structures are embodied, examines the relationship between conceptual systems and the construction of meaning. We consider such ideas as conceptual metaphor theory, conceptual blending, Image schemas, cross-domain mappings, metonymy, mental spaces, and idealized cognitive models. We apply these ideas to selected Christian, Buddhist, and Chinese religious texts in order to understand ways in which religious language categorizes and conceptualizes the world. We examine both the universality of cognitive linguistic processes and the culturally specific metaphors, conceptual blends, image schemas, and other cognitive operations that particular texts and traditions utilize. Offered as RLGN 352, RLGN 452, COGS 352 and COGS 452.

COGS 356. Advanced Topics in Cognitive Neuroscience. 3 Units.
This course focuses on specific areas of research in cognitive neuroscience in some depth. The first half of the semester covers basics and fundamental research areas (e.g., perception, attention) and examines the (sometimes controversial) theoretical issue of what cognitive neuroscience techniques tell us about the mind. The second half of the semester is dedicated to examining selected research topics of interest to students. Students research and write ‘grant proposals’ for cognitive neuroscience experiments. The class culminates with students and invited faculty simulating a funding panel, and deciding which grants to ‘fund’ from a limited budget. Prereq: COGS 102.

COGS 366. Functional Magnetic Resonance Imaging. 3 Units.
fMRI is the workhorse of cognitive neuroscience research. This course will take an in-depth look at this methodology, including hands-on experience analyzing imaging data. The course will address the following issues: How do fMRI and fmRI work? What does fMRI actually measure and how does that relate to cognition? What are the standard steps involved in processing and analyzing fMRI data to help answer specific questions? The course culminates in the production of a report of a novel analysis of imagining data that the students have performed (in small groups), including a broader description of what that analysis reveals about the neural basis of cognition. Prereq: COGS 102.

COGS 373. Intelligence and Cognition. 3 Units.
This course will focus on the notion and meaning of intelligence. What is intelligence? How is it measured, and are these measures adequate to the task? Is there more than one kind of intelligence? What is the relationship between intelligence and talent? Intelligence seems to be necessary for culture, art, religious belief, the creation of theories and the quest for knowledge, truth and morality; thus intelligence is a necessary condition for the study of itself. To attempt to understand intelligence is an undertaking in which we will ask questions about the self and the common nature of humanity, while simultaneously examining the abilities of animals and machines. What is the mark of intelligence? Recommended preparation: PHIL 101 or COGS 201. Offered as COGS 373 and PHIL 373.

COGS 375. Seminar in Cognitive Linguistics. 3 Units.
This course provides a comprehensive introduction to the study of language and meaning. We survey the main theoretical frameworks used to study these topics and apply them to a wide range of linguistic phenomena. We analyze both synchronic and diachronic data from a wide range of languages, with a particular focus on languages of Africa and Asia. Prereq: PHIL 101 or COGS 201.

COGS 379. Advanced Topics in Cognitive Science. 3 Units.
This course focuses on specific areas of research in cognitive science in some depth. The first half of the semester covers basics and fundamental research areas (e.g., perception, attention) and examines the (sometimes controversial) theoretical issue of what cognitive science techniques tell us about the mind. The second half of the semester is dedicated to examining selected research topics of interest to students. Students research and write ‘grant proposals’ for cognitive science experiments. The class culminates with students and invited faculty simulating a funding panel, and deciding which grants to ‘fund’ from a limited budget. Prereq: COGS 102.

RLGN 201. Seminar in Enlightenment Art and Literature: Piranesi and Vico. 3 Units.
This course explores aspects of the European eighteenth century as a transformative epoch in the history of western culture. Though the Enlightenment is usually associated especially with France, in this course we will focus on Italy, as the irresistible goal of travelers taking part in the “Grand Tour,” and as a landscape of powerful ancient and modern architecture and artworks universally recognized as exemplary. In particular we will study one of the strangest and most fascinating visual artists of the period, the self-proclaimed architect Giovanni Battista Piranesi (1720-1778) famous no less now than in his own time for his fantastic prison engravings as well as his views of Rome, involving a radical rethinking of the city as a particular kind of inhabited as well as imagined space. Piranesi’s polemical response to the advocates of the Greek revival, then coming into fashion, will lead into discussion of the key philosophical debates and aesthetic shifts of the time, notably the emergence of the notion of the sublime as a category eventually subversive of western ideals of rationality and still present -- and potent -- in our own culture. Finally we will place Piranesi within a current of discussion of the origins and nature of language and of human society in general, not least as manifested in architecture and other symbolic practices. The leading figure here is the Neapolitan G.B. Vico, whose New Science of 1725 remains one of the most stimulating texts in the western intellectual tradition. Offered as CLSC 340, COGS 340, WLIT 340, CLSC 440, and WLIT 440.

RLGN 352. Language, Cognition, and Religion. 3 Units.
This course utilizes theoretical approaches found in cognitive semantics -- a branch of cognitive linguistics -- to study the conceptual structures and meanings of religious language. Cognitive semantics, guided by the notion that conceptual structures are embodied, examines the relationship between conceptual systems and the construction of meaning. We consider such ideas as conceptual metaphor theory, conceptual blending, Image schemas, cross-domain mappings, metonymy, mental spaces, and idealized cognitive models. We apply these ideas to selected Christian, Buddhist, and Chinese religious texts in order to understand ways in which religious language categorizes and conceptualizes the world. We examine both the universality of cognitive linguistic processes and the culturally specific metaphors, conceptual blends, image schemas, and other cognitive operations that particular texts and traditions utilize. Offered as RLGN 352, RLGN 452, COGS 352 and COGS 452.

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COGS 378. Computational Neuroscience. 3 Units.
Computer simulations and mathematical analysis of neurons and neural circuits, and the computational properties of nervous systems. Students are taught a range of models for neurons and neural circuits, and are asked to implement and explore the computational and dynamic properties of these models. The course introduces students to dynamical systems theory for the analysis of neurons and neural learning, models of brain systems, and their relationship to artificial and neural networks. Term project required. Students enrolled in MATH 478 will make arrangements with the instructor to attend additional lectures and complete additional assignments addressing mathematical topics related to the course. Recommended preparation: MATH 223 and MATH 224 or BIOL 300 and BIOL 306. Offered as BIOL 378, COGS 378, MATH 378, BIOL 478, EME 478, ECECS 478, MATH 478 and NEUR 478.

COGS 381. Philosophy and Cognitive Neuroscience. 3 Units.
This course will focus on the various methodologies used in the cognitive neurosciences, and explore their strengths and weaknesses from scientific and philosophical standpoints. We will begin by examining baseline measures (including IQ tests, tasks of cognitive flexibility, verbal and visual memory, causal/sequential thinking and narrative tasks) and their experimental design. Lesion methods will follow, with an eye toward understanding the strength of inferences that can be drawn from such data. The course will also focus on imaging techniques (CAT, PET, SPECT, IMRI, TMS, etc.) as well as measures of electrical activity such as EEG and single-cell recordings. Students will become familiar with many fundamental assumptions necessary for the implementation of each method, and philosophical questions associated with these endeavors and their potential impact on our knowledge and society. Recommend preparation: PHIL 101 or COGS 201. Offered as COGS 381 and PHIL 381.

COGS 390. Introduction to General Semiotics. 3 Units.
Semiotics, the study of meaning and signs conveying meaning, is a central part of cognitive semantics, or 'high level' cognitive semantics. This discipline is typically taught in departments of linguistics, cognitive science, philosophy, or cultural studies. The domain of semiotics is in fact widely intersecting with other disciplines (general linguistics, philosophy, neuroscience, anthropology, music, literature, architecture, and the arts). Sign theory, text theory, studies of narrative structure, enunciation, natural logic, rhetoric and poetics, speech act forms, are important components in this field.

COGS 391. Introduction to Text Semiotics. 3 Units.
Introduction to Text Semiotics addresses both students of Literature and students in Cognitive Science. Most of the authors included in the reading list extend their linguistic approach towards fields that intersect literature, psychology, philosophy, aesthetics, and anthropology. The scholarly traditions of text analysis and structural theory of meaning, including authors from classical formalism, structuralism, structural semiotics, and new criticism will be connected to cognitive theories of meaning construction in text, discourse, and cultural expressions in general. The focus of this course, taught as a seminar, is on empirical studies, specific text analyses, discourse analyses, speech act analyses, and other studies of speech, writing, and uses of language in cultural contexts. This course thus introduces to a study of literature and cultural expressions based on cognitive science and modern semiotics—the new view that has been coined Cognitive Semiotics. Offered as COGS 391 and WLIT 391.

COGS 397. SAGES Capstone in Cognitive Science. 3 Units.
Supervised original research on a topic in cognitive science, culminating in a public presentation. The research may be in the form of an independent research project, a literature review, or some other form approved by the department. Counts as SAGES Senior Capstone.

This course is for students with special interests and commitments that are not fully addressed in regular courses, and who wish to work independently.

COGS 401. Special Topics in Cognitive Science. 3 Units.
Special Topics in Cognitive Science. Topics vary. Permission of department is required. Offered as COGS 301 and COGS 401.

COGS 402. Advanced Introduction to Cognitive Neuroscience. 3 Units.
This course takes an advanced look at how the methods of cognitive neuroscience can be used to inform theories of cognitive function, with implications for a range of disciplines. Students will be given an overview of methods, brain anatomy, and major findings in the field. In addition, they will read a number of primary source papers. The student may expect to come away from the course with a broad acquaintance with modern cognitive neuroscience, how its findings are relevant to a variety of fields, and how to critically assess primary source material. Cognitive neuroscience is a rapidly evolving field which synthesizes methodologies and conceptual frameworks from numerous different disciplines. No single individual can hope to master all the methods, background knowledge and conceptual systems which are of key importance to the discipline at any one point in time. Cognitive Neuroscience is therefore a group activity, in which progress is critically dependent on group interactions both at a local level (the "lab") and at more distributed levels (the wider scientific/academic community). The key objectives of this introductory course are therefore: 1. To give students a basic overview of current methods in cognitive neuroscience and the current state of knowledge in the field. 2. To enable students to go to, read, understand, research and evaluate the primary literature (i.e. journal articles). 3. To train students in the skills involved in group work, in particular through division of work and integration of acquired knowledge at a local level (i.e. lab-sized group), through effective and clear presentation of work, and through productive interactions with a large community. The first objective will be accomplished through lectures and assigned textbook readings. The second goal will be accomplished through assigned journal article readings. The third goal will be accomplished through a group structured format for accomplishing work, and through "journal club" style presentations to the class.

COGS 406. Theory of Cognitive Linguistics I. 3 Units.
This is the first course in a two-course sequence presenting theory and practice of cognitive linguistics. Offered as COGS 206 and COGS 406.

COGS 407. Cog Linguistics Theory II. 3 Units.
This is the second course in a two-course sequence presenting theory and practice of cognitive linguistics. Offered as COGS 307 and COGS 407. Counts as SAGES Departmental Seminar. Prereq: COGS 406 or consent of instructor.

COGS 408. Advanced Research Workshop I. 3 Units.
This course is an advanced research workshop for undergraduates and MA students. The workshop involves development of research topics (theoretical or empirical), and working on them with the input of other workshop members to produce final papers. Offered as COGS 308 and COGS 408.

COGS 409. Advanced Research Workshop II. 3 Units.
This course is an advanced research workshop for undergraduates and MA students. The workshop involves development of research topics (theoretical or empirical), and working on them with the input of other workshop members to produce final papers. MA students in cognitive linguistics will typically take this course as the second part of a two-part sequence. Offered as COGS 309 and COGS 409.
COGS 410. Cognitive Science of Religion. 3 Units.
This course introduces theories and methods in the cognitive science of religion. Particular emphasis is placed on applying cognitive scientific concepts and theories to such religious issues as belief in deities, religious ritual, and morality. We examine such topics as the relationship of religious studies to evolution and cognition, cognitive theories or religious ritual, anthropomorphism and religious representation, religion as an evolutionary adaptation, and cognitive semantics and religious language. Course work includes student-led discussions, a research-intensive journal-length essay on a topic chosen in consultation with the Instructor, and presentation of research findings to the class. Course readings are taken from the humanities, the social sciences, and natural sciences. Offered as: COGS 310, COGS 410, RLGN 310, RLGN 410.

COGS 411. Mind and Media. 3 Units.
An introduction to the study of mind and media, including the study of multimodal communication. This course investigates patterns of human cognition that are ancient to human beings and upon which media have converged for powerful, immersive effect. The cognitive processes studied include perception, sensation, imagination, joint attention, narrative conception, simulation, dreaming, identity construction, imaginative play, and implicit learning. Students engage in hands-on media analysis to study how basic human mental operations are used in media to achieve a variety of effects. Students will be given access to a private website of instructions, readings, and materials for the course, and will be introduced to a range of vast, rich, searchable databases of media. Students will have ample opportunity to do research inside such databases. Offered as: COGS 311 and COGS 411.

COGS 412. Second Language Acquisition I. 3 Units.
This course is an introduction to the growing field of second language acquisition (SLA). SLA seeks to understand the linguistic, psychological and social processes that underlie the learning and use of second language(s). The goal of research is to identify the principles and processes that govern second language learning and use. SLA is approached from three perspectives in the course: 1) as linguistic knowledge; 2) as a cognitive skill; and 3) as a socially and personality-mediated process. Important factors in second language learning will be identified and discussed. These include: age-related differences, the influence of the first language, the role played by innate (universal) principles, the role of memory processes, attitudes, motivation, personality and cognitive styles, and formal versus naturalistic learning contexts. The objective of this course is to survey the principal research in second language acquisition. Students will become familiar with the major research issues through their reading of both primary and secondary sources, as well as through lectures and class discussions. Offered as COGS 312, COGS 412, LING 301 and LING 401.

COGS 413. Special Topics in Cognitive Linguistics. 3 Units.
This course covers special topics in the field of cognitive linguistics. Topics will vary from semester to semester. Offered as COGS 313 and COGS 413.

COGS 415. Mental Space Theory. 3 Units.
This course covers theory of mental spaces and methodology of mental space analysis, with special emphasis on the use of mental space theory to analyze human performance in various areas of cognition, including reasoning, judgment, decision, counterfactual thought, inference, planning, communication and language, gesture, social cognition, cognitive design and engineering, representation, learning, humor, symbol systems, and invention. It includes a consideration of experimental methods that have arisen under the influence of mental space theory. A student may earn credit for either COGS 315 or COGS 415, but not both. Offered as COGS 315 and COGS 415.

COGS 416. Decision-Making. 3 Units.
This course is a topical introduction to decision-making, a major area of cognitive social science, with connections to economics, law, political science, business, policy, and related fields. Topics include game theory and rational calculation, equilibria, kinds of choice, heuristics, the role of affect in decision, framing, bounded rationality, mechanisms of choice such as heuristics, the role of social cognition in choice, concepts of self and other, and computer modeling of choice. The course also includes an introduction to the design of empirical behavioral research. Offered as COGS 316 and COGS 416.

COGS 417. Cognitive Diversity. 3 Units.
This course surveys research from cognitive science (psychology, linguistics, neuroscience, etc.) on the ways that different people think differently. We will consider dimensions such as sex, gender, sexual orientation, race/ethnicity, bodily differences, cultural differences, and effects of speaking different languages. Students will choose the last two topics at the end of the semester (Different religions? Different ages? Whatever interests the class!). Offered as COGS 317 and COGS 417.

COGS 425. Cognitive Approaches to Literature. 3 Units.
This course approaches literature as a window into language, in which cognition is characterized by the same imaging and imaginary properties as artistic literature. It is an attempt to identify and analyze procedures as aesthetically interesting and generally relevant forms of human thinking, feeling, imagining, fantasizing, and conceptualizing. The course introduces current theories of literature in relation to language and mind, and it presents and discusses practical applications in critical reading and text analysis, using examples from modern literature in the main genres. A student may earn credit for either COGS 325 or COGS 425 but not both. Recommended preparation: COGS 101, COGS 202. Offered as COGS 325 and COGS 425.

COGS 427. Gesture in Cognition and Communication. 3 Units.
Most people never notice that when they are talking, they’re also gesturing. Why do we produce these gestures? What can studying them tell us about the human mind? This course surveys scientific research on gesture, exploring topics such as the role of gesture in communication, cross-cultural differences in gesture, and the relationship between gesture and signed languages. The course will focus on gestures produced with speech, but will cover symbolic and ritualized gesture in the visual arts and in dance. Offered as COGS 327 and COGS 427 and MLIT 327. Counts as SAGES Departmental Seminar.

COGS 452. Language, Cognition, and Religion. 3 Units.
This course utilizes theoretical approaches found in cognitive semantics -- a branch of cognitive linguistics -- to study the conceptual structures and meanings of religious language. Cognitive semantics, guided by the notion that conceptual structures are embodied, examines the relationship between conceptual systems and the construction of meaning. We consider such ideas as conceptual metaphor theory, conceptual blending, image schemas, cross-domain mappings, metonymy, mental spaces, and idealized cognitive models. We apply these ideas to selected Christian, Buddhist, and Chinese religious texts in order to understand ways in which religious language categorizes and conceptualizes the world. We examine both the universality of cognitive linguistic processes and the culturally specific metaphors, conceptual blends, image schemas, and other cognitive operations that particular texts and traditions utilize. Offered as RLGN 352, RLGN 452, COGS 352 and COGS 452.
COGS 499. Independent Studies. 1 - 3 Unit.
This course is a face-to-face seminar between students and instructor, aiming at letting and helping the students independently develop original research on well-defined topics in the field of cognitive linguistics. Themes can vary within the wide area of cognition and culture.

COGS 651. Thesis. 1 - 6 Unit.
Conduct independent research and writing in Cognitive Linguistics under the guidance of a faculty adviser from Cognitive Science. The precise requirements of the course are to be determined by the faculty advisor. Prereq; COGS 406 and COGS 407 and COGS 408. Coreq; COGS 409.

Department of Psychological Sciences

Communication Sciences Program (p. 115) | Psychology Program (p. 115)

The Department of Psychological Sciences combines the areas of study found in many psychology departments with those typically found in communication sciences departments. Our distinctive department offers undergraduate majors and minors in communication sciences and in psychology. We also offer a minor in health communications. For graduate students, our Psychology Program offers accredited doctoral training in clinical psychology and experimental psychology. Our accredited Communication Sciences Program offers a master’s degree in speech-language pathology as well as a doctorate in communication sciences.

Communication Sciences

Cleveland Hearing & Speech Center, 11635 Euclid Ave, Room 333
Phone: 216.368.2470

The Department of Psychological Sciences offers courses of study in communication sciences leading to Bachelor of Arts, Master of Arts, and Doctor of Philosophy degrees. The Communication Sciences Program prepares undergraduate and graduate students to address broad issues of human communication processes and disorders through the application of cutting-edge technology and rigorous clinical training. We provide a comprehensive foundation in normal and disordered human communication and combine it with innovative interdisciplinary experiences that capitalize on the extensive resources of the university and the surrounding medical community. The department enjoys a particularly close relationship with Cleveland Hearing & Speech Center (http://www.chsc.org), an outstanding independent, nonprofit provider of care in speech-language pathology and audiology; in fact, the program is housed within the center.

Many students pursue undergraduate study in communication disorders as preparation for further study in other fields or in conjunction with study in other fields. For example, one can combine a major in communication disorders with a major in sociology or psychology or with a minor in gerontological studies. Professionals in human services fields such as medicine, social work, nursing, or education often work with persons with communication disorders. For students interested in academic or research careers, investigation in the field of communication disorders is often done alongside investigation of normal human behavior. For example, one might study the word learning of children with normal language as well as that of children with language impairment.

Psychology

103 Mather Memorial Building

The Psychology Program offers the combined advantages of a strong liberal arts college and a major university. There are classes in all major areas of the psychology field. We encourage close student-faculty relationships and offer many opportunities for individualized study and research.

Psychology is the study of the mind and behavior. The discipline embraces all aspects of the human experience: from the functions of the brain to the actions of neurons, from child development to care for the aged. In settings ranging from scientific research centers to mental health care services, “the understanding of behavior” is the enterprise of psychologists. An undergraduate major in psychology offers a student preparation for a wide variety of careers. Many majors find psychology to be an excellent preparation for such service-oriented professions as social work, counseling and guidance, special education, and management. Those who pursue graduate work in one of the many fields of psychology often seek positions in teaching and research or applied human services. In addition, the study of psychology provides a knowledge and an understanding of behavior that has applications in professions such as nursing, medicine, law, teaching, business, and public relations.

Communication Sciences Program (p. 112) | Psychology Program (p. 113)

Communication Sciences

Major

The major in communication sciences leads to the Bachelor of Arts degree. For many students, a BA in communication sciences is a pre-professional degree in preparation for graduate study in speech-language pathology or audiology. The undergraduate course work emphasizes the basic processes and acquisition of normal communication in children and adults. Graduate study then focuses on the study of disordered communication. (Please see the description of the Integrated Graduate Studies Program below.)

Students pursuing the BA are required to take 45 credit hours of course work which includes study in communication sciences and disorders, psychology, and English/linguistics, as well as in statistics and research design. A recommended course sequence is shown below. Please note, however, that an individual student’s sequence may differ from this one. For example, undergraduate students may elect to take 400- or 500-level graduate courses with departmental/instructor permission.

Suggested Sequence of Required Courses for the Bachelor of Arts Degree (45 credits)

<table>
<thead>
<tr>
<th>First Year</th>
<th>Units</th>
<th>Fall</th>
<th>Spring</th>
</tr>
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<tbody>
<tr>
<td>General Psychology I (PSCL 101)</td>
<td>3</td>
<td></td>
<td></td>
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<tr>
<td>Introduction to Communication Disorders (COSI 109)</td>
<td></td>
<td>3</td>
<td></td>
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<tr>
<td>Year Total:</td>
<td>3</td>
<td>3</td>
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<tr>
<th>Second Year</th>
<th>Units</th>
<th>Fall</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phonetics and Phonology (COSI 211)</td>
<td>3</td>
<td></td>
<td></td>
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<tr>
<td>Multicultural Aspects of Human Communication (COSI 260)</td>
<td>3</td>
<td></td>
<td></td>
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<tr>
<td>Child Psychology (PSCL 230)</td>
<td>3</td>
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</tbody>
</table>
Introduction to American Sign Language I (COSI 220) 3
Quantitative Methods in Psychology (PSCL 282) 3
Introduction to Linguistics (COSI 355) 3
Year Total: 9 9

Third Year

<table>
<thead>
<tr>
<th>Units</th>
<th>Fall</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language Development (COSI 313)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Anatomy and Physiology of Speech and Hearing Mechanism (COSI 325)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Research Design and Analysis (PSCL 375)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Speech and Hearing Science (COSI 321)</td>
<td>3</td>
<td></td>
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<tr>
<td>Year Total:</td>
<td>9</td>
<td>3</td>
</tr>
</tbody>
</table>

Fourth Year

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<thead>
<tr>
<th>Units</th>
<th>Fall</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction to Clinical Practice in Speech-Language Pathology (COSI 352)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Introduction to Audiology (COSI 370)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Communication and Aging (COSI 345)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Year Total:</td>
<td>6</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Units in Sequence: 45

* COSI 109 Introduction to Communication Disorders is offered in the fall and spring semesters. All other COSI courses are offered only one semester per year, as indicated above.

Departmental Honors

Juniors with a 3.0 overall grade point average and a 3.25 average in communication sciences are encouraged to apply to the honors program. The honors program consists of one three-credit course, COSI 395 Capstone and Honors Program, in which the student carries out an independent project in an area of interest, under the direction of a COSI faculty member. Satisfactory completion of the project qualifies the student to receive the Bachelor of Arts degree with departmental honors noted on the transcript. Admission to the honors program is by faculty approval.

The following are prerequisites to COSI 395 Capstone and Honors Program:

| STAT 201 | Basic Statistics for Social and Life Sciences | 3 |
| PSCL 282 or PSCL 375 | Quantitative Methods in Psychology | 3 |
| PSCL 375 | Research Design and Analysis | 3 |

Additional information is available from the academic advisor.

Integrated Graduate Studies

The Integrated Graduate Studies (IGS) Program (http://bulletin.case.edu/undergraduatestudies/gradprofessional/accelerationtowardgraduatedegreestext) is intended for undergraduate students who are interested in obtaining a graduate degree in communication disorders (speech-language pathology). Qualified students may be accepted for admission to the School of Graduate Studies after completing 90 hours of undergraduate course work.

Typically, a master's degree requires two additional years of study beyond the bachelor's degree. Through the IGS Program, however, a student can complete an undergraduate degree in communication disorders and a master's degree in communication disorders in five years. The recommended undergraduate sequence for students interested in the IGS Program is somewhat different from the recommended sequence presented above. Students should consult their academic advisor and the Office of Undergraduate Studies for additional information concerning IGS requirements.

Minor in Communication Sciences

The minor in communication sciences requires a minimum of 15 credit hours. It focuses on normal processes of speech, language, and hearing, as well as on the speech, language, and hearing disorders that result from breakdowns in these processes. Interested students should meet with an advisor for specific course requirements.

| COSI 109 | Introduction to Communication Disorders | 3 |
| COSI 313 | Language Development | 3 |
| COSI 325 | Anatomy and Physiology of Speech and Hearing Mechanism | 3 |
| Two of the following courses: | | 6 |
| COSI 211 | Phonetics and Phonology |
| COSI 220 | Introduction to American Sign Language I |
| COSI 321 | Speech and Hearing Science |
| COSI 345 | Communication and Aging |

Total Units 15

Minor in Health Communication

The minor in health communication offers introductory and advance study in theoretical and practical application of communication within a health context. It includes a variety of additional courses that students can choose according to their specific areas of interest. The course work is designed to appeal to students in such fields as pre-med, nursing, pre-law, public policy, public health, communication disorders, gerontological studies, nutrition, health management, and social work.

The minor requires 15 credit hours of course work, of which 9 credit hours come from required courses:

| COSI 101 | Introduction to Health Communication | 3 |
| COSI 109 | Introduction to Communication Disorders | 3 |
| COSI 340 | Health Communication | 3 |
| Two of the following: | | 6 |
| COSI 200 | Interpersonal Communication |
| COSI 260 | Multicultural Aspects of Human Communication |
| COSI 280 | Organizational Communication |
| COSI 332 | Persuasion |
| COSI 345 | Communication and Aging |

Total Units 15

Psychology

Undergraduate Programs

Major in Psychology

(Effective July 1, 2014 for those students who matriculate Fall 2014 or later)

An undergraduate major in psychology provides preparation for graduate training in psychology, medicine, social work, allied health professions,
education, business, computer science, or law. The undergraduate degree directly prepares students for careers that require knowledge and understanding of behavior, research design, and the ability to collect, analyze, and interpret data.

Requirements for a Psychology Major

Beginning with Allport (1937), scientific psychology has historically relied on two broad complementary traditions in the study of human behavior. The nomothetic or experimental approach focuses on identifying general laws about human behavior. The idiographic approach is concerned with the uniqueness of people and focuses on differences among individuals. Although all psychology courses apply both perspectives to specific topics in psychology, subsets of psychology courses rely more heavily on one or the other; therefore, the major requirements below ensure training that reflects a balance of nomothetic and idiographic approaches.

The psychology major requires a total of 30 credit hours comprised of PSCL 101 General Psychology I and PSCL 282 Quantitative Methods in Psychology; 2 nomothetic courses; and 2 idiographic courses. The remaining 12 credits of elective course work can be taken as any combination of PSCL courses.

Psychology majors must complete 30 hours of course work in the department.

Take the 2 required core courses below (total of 6 credit hours)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSCL 101</td>
<td>General Psychology I</td>
<td>3</td>
</tr>
<tr>
<td>PSCL 282</td>
<td>Quantitative Methods in Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

Select 2 of the following nomothetic courses (total of 6 credit hours)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSCL 315</td>
<td>Social Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSCL 352</td>
<td>Physiological Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSCL 353</td>
<td>Psychology of Learning</td>
<td>3</td>
</tr>
<tr>
<td>PSCL 357</td>
<td>Cognitive Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

Select 2 of the following idiographic courses (total of 6 credit hours)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSCL 230</td>
<td>Child Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSCL 313</td>
<td>Psychology of Personality</td>
<td>3</td>
</tr>
<tr>
<td>PSCL 321</td>
<td>Abnormal Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSCL 325</td>
<td>Psychotherapy and Personality Change</td>
<td>3</td>
</tr>
<tr>
<td>PSCL 369</td>
<td>Adult Development and Aging</td>
<td>3</td>
</tr>
</tbody>
</table>

Select Elective Courses (any combination of additional PSCL courses, total of 12 credit hours)*

* Although not required for the Psychology Major, PSCL 375 (Research Design and Analysis) is a prerequisite for most of the senior capstone courses in psychology.

Psychology majors should work closely with their major advisors to customize the selection of required and elective courses to provide them with courses suited to their own individual career goals.

Declaring a Major

Students who wish to major in psychology must complete a Major Declaration form, available from the Office of Undergraduate Studies (http://bulletin.case.edu/collegeofartsandsciences/psychology%20http://www.case.edu/ugstudies) (Sears 357), and then meet with the department chair, Dr. Lee Thompson, who will assign them an advisor and review the degree requirements.

Special Programs for Psychology Majors

Psychology Honors Program: Qualified psychology majors are encouraged to consider the department's honors program, which leads to a BA with honors in psychology. The program's purpose is to provide intensive, supervised research experience. Completion of the honors program also satisfies the SAGES capstone graduation requirement.

The program consists of PSCL 375 Research Design and Analysis, which students take in their junior year, and PSCL 395 Capstone and Honors Program, which they take as seniors. By the end of the senior year, students design and execute a research project, write it up in scholarly form, and present it in a public setting. Psychology majors who successfully complete PSCL 395, and who attain at least a 3.25 GPA in psychology course work and an overall GPA of at least 3.0, will graduate with honors in psychology.

The selection of a faculty advisor is an important part of the honors program. The first step is to identify a faculty member whose interests are as close as possible to the research area the student wishes to pursue. Students should contact a potential advisor as early as possible (junior year is recommended) and ask about the possibility of registering for PSCL 395. Each section of PSCL 395 is assigned to a specific faculty member, and registration is by permit only.

Because the honors program requires significant time and commitment, only psychology majors with a serious interest in the behavioral sciences should consider completing it.

Integrated Graduate Studies Program: The IGS Program enables qualified undergraduates to complete the academic work for a BA and MA degree in four years. Students accepted into the program must complete at least 27 credit hours of graduate course work during their senior year, plus a thesis or comprehensive exam, for a Master of Arts in General Psychology. The minimum standards for acceptance are:

- an overall GPA of 3.2
- completion of the Arts and Sciences General Education or SAGES Requirements and two semesters of physical education
- 90 semester hours of undergraduate credit (the last 60 hours must have been earned while the student was in residence at CWRU)
- completion of the psychology major requirements with at least a 3.2 GPA

Students should meet with their major advisor and with Dean Claudia Anderson in the Office of Undergraduate Studies during the fall semester of their junior year to receive pre-approval for eligibility for the IGS Program.

Students seeking admission to the IGS Program complete the same application process as those seeking admission to the graduate program in experimental psychology; instructions are provided on the department's website (http://psychology.case.edu/experimental/checklist.html). However, prospective IGS Program students are not required to submit GRE scores. The application deadline each year is January 15.

Participation in the IGS Program does not preclude involvement in the department's honors program. For more information, consult the IGS Program section of this bulletin (http://bulletin.case.edu/undergraduatestudies/gradprofessional/accerlerationtowardgraduatedegreetext) or contact Dr. Lee Thompson (lee.thompson@case.edu).
Communication Sciences

Master of Arts

The principal goal of the Master of Arts program is to develop clinical scientists who are skilled in the management of individuals with speech and language disorders. The master’s program is accredited by the Council on Academic Accreditation of the American Speech-Language-Hearing Association (ASHA). Upon successful completion of the Master of Arts degree, students will also meet the academic and clinical practicum requirements for certification by ASHA and licensure in the State of Ohio.

Degree requirements include completion of 42 credit hours of course work, including a clinical practicum in communication disorders. In addition, students must satisfactorily complete a clinical research project or write a master’s thesis.

Clinical Opportunities in Speech, Language, and Hearing Disorders

The program is affiliated with, and located in, Cleveland Hearing & Speech Center (CHSC), a nonprofit agency that serves children and adults with communication disorders. CHSC serves as the primary training site for graduate students enrolled in clinical practice. Its personnel and facilities provide exceptional clinical experiences for students seeking clinical certification in speech-language pathology.

The program also draws on clinical resources in University Circle and the Greater Cleveland area. In addition to clinical practicum experiences at CHSC, graduate students complete at least two externships at sites including University Hospitals of Cleveland, Rainbow Babies and Children’s Hospital, MetroHealth Medical Center, Cuyahoga County Board of Mental Retardation and Developmental Disabilities, Cleveland Clinic Center for Autism, Legacy Health Services, and Western Reserve Speech and Language Partners.

Doctor of Philosophy

The Doctor of Philosophy is awarded in recognition of (1) mastery, at an advanced level, of a body of knowledge in the disciplines of communication sciences and speech-language pathology, and (2) a demonstrated ability to perform independent research and communicate the results of that research. With the major advisor, the student designs an individual plan of study based on his/her professional goals and previous experience. Doctoral students choose a content area (such as communication and aging, medically based speech disorders, or child language development and disorders) as their primary focus of study. However, they are also encouraged to enhance their scholarly preparation by completing course work outside of their primary content area.

In addition to course work within the department, doctoral students may choose courses from graduate programs in other departments of the College of Arts and Sciences, as well as from several professional schools at the university, including the School of Medicine (e.g., neuroscience, genetics), the Case School of Engineering (e.g., biomedical engineering), the School of Dental Medicine, the Weatherhead School of Management, and the Mandel School of Applied Social Sciences.

Requirements for the doctoral program include course work, research rotations, a supervised classroom teaching experience, written and oral comprehensive examinations, and a dissertation.

- A minimum of 36 hours of course work is required, including 9 credit hours in statistics and research design and 3 credit hours of directed study and research. Fifteen credit hours in the primary content area are required.
- Two research rotations are required. One rotation is completed in the primary content area with the major advisor. The second rotation is completed with a faculty member other than the major advisor. The dissertation research is not included in either of the two research rotations.
- A supervised classroom teaching experience is completed under the guidance of a faculty member in the program.
- Written and oral examinations are taken after all course work and research rotations are completed.
- A dissertation prospectus is prepared under the guidance of a committee consisting of the dissertation advisor and two additional faculty members. A defense of the dissertation prospectus is required prior to commencing the dissertation study.
- An oral defense of the dissertation takes place at the end of the doctoral program.

Additional information about graduate work in communication sciences is available on the program’s website (http://www.case.edu/artsci/cosi).

Psychology

The Department of Psychological Sciences offers full-time programs leading to a PhD in clinical or experimental psychology. These programs give students a thorough grounding in basic areas of psychological fact and theory and prepare them for careers as researchers, teachers, and practitioners. The Master of Arts degree can be earned in the department as part of work toward a doctorate.

Clinical Psychology. The department’s program in clinical psychology, which has been approved by the American Psychological Association, emphasizes the scientist-practitioner model. Students participate in an integrated curriculum of basic and applied courses, research activities, and practicum and pre-internship placements. The program’s goal is to prepare students to make meaningful contributions to the science and profession of psychology by instructing them in broad applications of clinical skills and research methods.

Experimental Psychology. Doctoral training in experimental psychology prepares the student for an academic career in teaching and research. It offers concentrations in developmental psychology, adulthood and aging, cognitive psychology, mental retardation research, and social psychology. Faculty members help students develop flexible programs of study, according to individual interests.

Additional information about graduate work in psychology is available on the program’s website (http://psychology.case.edu).

Department Faculty

Lee A. Thompson, PhD
University of Colorado, Boulder
Professor; Chair
Human behavior genetics; child development
Lauren Calandruccio, PhD  
(Syracuse University)  
*Assistant Professor*  
Audiology

Angela Hein Ciccia, PhD  
(Case Western Reserve University)  
*Assistant Professor*  
Neuroscience of communication and communication disorders in adolescents/adults, with focus on traumatic brain injury

Arin M. Connell, PhD  
(Emory University)  
*Associate Professor*  
Internalizing problems; coping skills during adolescence

Heath A. Demaree, PhD  
(Virginia Tech)  
*Professor*  
Cerebral and psychophysiological bases of emotion

Anastasia Dimitropoulos, PhD  
(Vanderbilt University)  
*Associate Professor*  
Genetic syndromes involving intellectual disabilities; compulsive behavior in MR/DD; functional neuroimaging

Julie J. Exline, PhD  
(State University of New York, Stony Brook)  
*Professor*  
Social relationships; transgression; moral and religious issues

Norah C. Feeny, PhD  
(Bryn Mawr College)  
*Professor*  
Evaluation of interventions for anxiety (e.g., post-traumatic stress disorder) and mood disorders

Grover C. Gilmore, PhD  
(Johns Hopkins University)  
*Professor; Dean, Mandel School of Applied Social Sciences*  
Perceptual development and aging; visual information processing; memory; psychophysics

Robert L. Greene, PhD  
(Yale University)  
*Professor*  
Human memory and cognition

Barbara Lewis, PhD  
(Case Western Reserve University)  
*Professor*  
Familial and genetic bases of speech/language

Brooke Macnamara, PhD  
(Princeton University)  
*Assistant Professor*  
Cognitive psychology, skill acquisition, learning, human performance, working memory, cognitive control, bilingualism, and communication

T. J. McCallum, PhD  
(University of Southern California)  
*Associate Professor*  
Older adults; caregiving; ethnicity; stress and coping

James C. Overholser, PhD  
(Ohio State University)  
*Professor*  
Adult psychopathology; depression; suicide; personality disorders

Amy Przeworski, PhD  
(Pennsylvania State University)  
*Assistant Professor*  
Anxiety disorders; emotion regulation; cultural factors in family interactions

Kathryn (Kyra) Rothenberg, PhD  
(Kent State University)  
*Instructor*  
Health communication

Sandra W. Russ, PhD  
(University of Pittsburgh)  
*Distinguished University Professor and Louis D. Beaumont University Professor*  
Creativity; affective development in children; personality assessment; coping mechanisms in children

Elizabeth J. Short, PhD  
(University of Notre Dame)  
*Professor*  
Cognitive psychology; applied developmental; learning disabilities

Jennell Vick, PhD  
(University of Washington)  
*Assistant Professor*  
Study of movements of the face, lips, and tongue that generate speech; acquisition and development of speech in typically developing infants and children; impact of various disorders on speech acquisition, development, and production

**Lecturers**

Jennifer L. Butler, PhD  
(Case Western Reserve University)  
*Full-time Lecturer*  
Social psychology

Patrice O. Carothers, MS, CCC-A  
(Ithaca College)  
*Part-time Lecturer*  
Fluency disorders

Kathryn (Kay) McNeal, MS, CCC-SLP  
(Purdue University)  
*Full-time Lecturer*  
Speech-language pathology

Jean Nisenboum, MA  
(Miami University)  
*Full-time Lecturer*  
Dysphagia, Diagnosis of speech
Adjunct Faculty

Melissa Baker, MS, CCC-SLP
(Bowling Green State University)
*Adjunct Instructor; Monarch Center for Autism*
Speech-language pathology

Rachel Berkowitz, MA, CCC-SLP
(University of Cincinnati)
*Adjunct Instructor, Mayfield Schools*
Speech-language pathology

Laura Brady, MA, CCC-A
(Kent State University)
*Adjunct Instructor; Cleveland Hearing & Speech Center*
Audiology

Lisa Bruening, MS, CCC-SLP
(University of Wisconsin)
*Adjunct Instructor; ALS Association, Northern Ohio Chapter*
Speech-language pathology

Jane R. Buder-Shapiro, PhD
*Adjunct Assistant Professor; private practice*

Cameron Camp, PhD
*Adjunct Professor; Myers Research Institute*

Sandra Caramela-Miller, PhD
*Adjunct Assistant Professor; Cuyahoga County Coroner's Office*

Barbara Choudhury, MA, CCC-SLP
(Case Western Reserve University)
*Adjunct Instructor, Cleveland Hearing & Speech Center*
Speech-language pathology

Michael Christie, PhD
(University of Akron)
*Adjunct Assistant Professor*

Joseph Dittmer, PhD
(Kent State University)
*Adjunct Assistant Professor*

Margaret Duff, MA, CCC-SLP
(Kent State University)
*Adjunct Instructor; Cleveland Hearing & Speech Center*
Speech-language pathology

Barbara Ekelman, PhD
*Adjunct Assistant Professor*
Pediatrics

Thomas Ference, PhD
(University of Kansas)
*Adjunct Assistant Professor*

Michelle Foye, MA, CCC-SLP
(Kent State University)
*Adjunct Instructor; Cleveland Hearing & Speech Center*
Speech-language pathology

Thomas Frazier, PhD
(Case Western Reserve University)
*Adjunct Assistant Professor*
Autism

Nicole Gerami, MA, CCC-SLP
(Case Western Reserve University)
*Adjunct Instructor; private practice*
Speech-language pathology

Robert Goldberg, PhD
*Adjunct Associate Professor; Louis Stokes Cleveland VA Medical Center*

Bernard P. Henri, PhD
(Northwestern University)
*Adjunct Associate Professor; Director, Cleveland Hearing & Speech Center*
Fluency disorders; professional issues in speech-language pathology; health care management

Douglas Hicks, PhD
(Vanderbilt University)
*Adjunct Professor; Cleveland Clinic Foundation*
Voice disorders

Vanessa Jensen, PhD
*Adjunct Assistant Professor; Cleveland Clinic*

Karen Kantzes, AuD, CCC-A
(A.T. Still University)
*Adjunct Instructor, Cleveland Hearing & Speech Center*
Audiology

Susan M. Knell, PhD
*Adjunct Assistant Professor; Spectrum Psychological Associates*

Marilyn Malkin, PhD
*Adjunct Assistant Professor; private practice*

Michael Manos, PhD
(University of Arizona)
*Adjunct Assistant Professor*

Lauren Masuga, MA, CCC-SLP
(Miami University)
*Adjunct Instructor; Cleveland Hearing & Speech Center*
Speech-language pathology

Darlene Moenter-Rodriguez, PhD
(Ohio State University)
*Adjunct Assistant Professor; Louis Stokes Cleveland VA Medical Center*
Auditory potentials

Shirley Prok
*Adjunct Instructor; Sign Language Instructor, Cleveland Hearing & Speech Center*

Philip Safford, PhD
*Adjunct Professor; Emeritus, Kent State University*

Ethan Schafer, PhD
*Adjunct Assistant Professor; Spectrum Psychological Associates*

Jes Sellers, PhD
*Adjunct Assistant Professor; Director, University Counseling Services*
Jeremy Shapiro, PhD  
Adjunct Assistant Professor; Advanced Therapy Center

Harry Sivec, PhD  
Adjunct Assistant Professor; Northcoast Behavioral Healthcare

Kevin Smith, PhD  
(University of Akron)  
Adjunct Assistant Professor

Kenneth Weiss, PhD  
Adjunct Assistant Professor; Louis Stokes Cleveland VA Medical Center

Brigid Whitford, AuD, CCC-A  
(A.T. Still University)  
Adjunct Instructor; Cleveland Hearing & Speech Center

Stacy Williams, PhD  
Adjunct Assistant Professor

Lucene Wisniewski, PhD  
Adjunct Assistant Professor; Cleveland Center for Eating Disorders

**Secondary Faculty**

Richard E. Boyatzis, PhD  
Professor of Organizational Behavior, Weatherhead School of Management

Alan Castro, PhD  
Senior Instructor; University Hospitals Case Medical Center

Howard Hall, PsyD, PhD  
Associate Professor, School of Medicine/Rainbow Babies and Children’s Hospital

Rebecca Hazen, PhD  
Assistant Professor, School of Medicine/Rainbow Babies and Children’s Hospital

Leslie L. Heinberg, PhD  
Associate Professor, The Cleveland Clinic Lerner College of Medicine

Anthony Jack, PhD  
(University College London)  
Associate Professor, Department of Philosophy

Gunnar Karakurt, PhD  
(Purdue University)  
Assistant Professor  
Family Medicine

Carolyn Landis, PhD  
Associate Professor, School of Medicine/Rainbow Babies and Children’s Hospital

Britt A. Nielsen, PhD  
Assistant Professor, Department of Psychiatry, School of Medicine

Lynn Singer, PhD  
Professor, School of Medicine/University Hospitals

Terry Stancin, PhD  
Professor, School of Medicine/MetroHealth Medical Center

Thomas P. Swales, PhD  
Assistant Professor, School of Medicine/MetroHealth Medical Center

Gerry Taylor, PhD  
Professor, Department of Pediatrics, School of Medicine

Abraham Wolf, PhD  
Professor, Department of Psychiatry, School of Medicine

James M. Yokely, PhD  
Assistant Professor, Department of Psychiatry, School of Medicine

**Clinical Faculty**

Jennifer Anderson, PhD  
(University of Toledo)  
Clinical Instructor  
Pediatrics

Kathleen Ashton, PhD  
(Ohio State University)  
Clinical Instructor  
Bariatrics

Karen Kernberg Bardenstein, PhD  
Adjunct Assistant Professor; private practice

Karen Broer, PhD  
(Kent State University)  
Clinical Instructor

Richard A. Cirillo, PhD  
Clinical Assistant Professor; Cuyahoga County Board of Mental Health and Developmental Disabilities

Sandra L. Curry, PhD  
Clinical Assistant Professor; Department of Psychiatry, School of Medicine

Lori L. D’Angelo, PhD  
Clinical Instructor; International Center for Clubhouse Development

Lisa Damour, PhD  
Clinical Instructor; private practice

Mathew A. Fuller, PhD  
Clinical Instructor; Louis Stokes Cleveland VA Medical Center

Thomas Hagesfeld, Ph.D.  
(Case Western Reserve University)  
Clinical Assistant Professor

Gerald Hayes, PhD  
(Wright State University)  
Clinical Instructor

Maureen Kreick, PhD  
Clinical Instructor; private practice

Maryann McGlenn, PhD  
Clinical Instructor; University Counseling Services

Pamela Nilsson, PhD  
Clinical Instructor; University Counseling Services
Richard Pazol, PhD  
Clinical Instructor; University Counseling Services

Joy Pengilly-Wyatt, PhD  
Clinical Instructor; University Counseling Services

David Pincus, DMH  
Clinical Assistant Professor, Department of Psychiatry, School of Medicine

Josephine Ridley, PhD  
(West Virginia University)  
Clinical Instructor

Robert Smith, PhD  
Clinical Assistant Professor; Behavioral Mangement Associates, Inc.

Terry Tobias, PhD  
Clinical Assistant Professor; Private Practice

Kelly Wadeson, PhD  
(Saint Louis University)  
Clinical Instructor

Emeritus

Douglas K. Detterman, PhD  
(University of Alabama, Tuscaloosa)  
Louis D. Beaumont University Professor Emeritus

Donald K. Freedheim, PhD  
(Duke University)  
Professor Emeritus of Psychology

Jane Kessler, PhD  
(Western Reserve University)  
Lucy Adams Leffingwell Professor Emerita of Psychology

Milton E. Strauss, PhD  
(Harvard University)  
Professor Emeritus of Psychology

COSI Courses

COSI 101. Introduction to Health Communication. 3 Units.
An introductory examination of the influences associated with the functions of human life, communication processes, and research related to health and the health care industry from interpersonal, cultural, and organizational communication perspectives. The course will include a review of the history and development of health communication and the understanding and application of communication theories.

COSI 109. Introduction to Communication Disorders. 3 Units.
Forty-two million Americans have some type of communication disorder. How does a person with a communication disorder cope with the challenges of daily living? This course will examine the characteristics of communication disorders via first hand and fictionalized accounts in books, films, and simulated communication disorders experiences. Topics will include disorders of speech, language, and hearing in children and adults. Effects of communication disorders on families.

COSI 200. Interpersonal Communication. 3 Units.
Communication is a primary means of initiating, maintaining, and dissolving relationships. Managing interpersonal relationships is a human concern across several contexts. Interpersonal communication is a highly interactive course whereby participants investigate the foundations, processes, and issues associated with communication in relationships. The student will become sensitized to theories and processes via traditional lectures and textbook readings. The student is also expected to participate in group discussions. The result is a continuous dialogue with others about communication processes, and outcomes. The goal of this course is to provide a forum for both investigation and increased competence.

COSI 211. Phonetics and Phonology. 3 Units.
Theoretical and applied study of the speech sounds of language. The use of the international phonetic alphabet as a tool for characterizing normal and deviant sound patterns. The linguistic structure and function of speech sound systems of both the adult and developing child.

COSI 220. Introduction to American Sign Language I. 3 Units.
This course offers basic vocabulary training and conversational interaction skills in American Sign Language. Syntactic and semantic aspects of American Sign Language will be addressed.

COSI 221. Introduction to American Sign Language II. 3 Units.
This class is taught without voice, using functional, whole language approaches and in situ experiences, emphasizing communicative competency. It emphasizes sentence structure development, classifiers, and conversational regulating behaviors. It also covers inflection, role shifting, adverbal non-manual behaviors, temporal aspects, sequencing, and includes a brief introduction to ASL English diglossia and bilingual aspects. There will be opportunities for discussion of deaf culture. Prereq: COSI 220.

COSI 260. Multicultural Aspects of Human Communication. 3 Units.
Introduces intercultural/interracial communication by discussing specific communication principles and by putting theory into practice by exploring differences in perception, and verbal and nonverbal communication messages. Course emphasizes relationship between communication, race, culture; nature of race and culture; and how they influence the communication process. Various theories and approaches to study of intercultural/interracial communication will be discussed, along with significant concepts, processes and considerations. Practical outcomes of intercultural/interracial encounters also will be discussed.

COSI 280. Organizational Communication. 3 Units.
This course includes a review of the development of organizational communication theories and how application of theories enhances our understanding of various types of organizations. COSI 280 addresses the communication challenges faced by contemporary organizational leaders and members. Knowledge of the theories and development of analytical skills should improve students’ chances for successful interactions in diverse organizational situations and cultures.
COSI 301. Professional Speaking. 3 Units.
This course is designed to introduce students to theories and practices and to develop their abilities to speak effectively in public. Students will develop skills in organization and presentation of ideas for public and conference forums, in critical listening, and in proper use of technology. Students demonstrate abilities via written assignments, skill building exercises, oral presentations, rhetorical analysis, and group projects. The expectations in this course include high levels of participation and interaction. This is a departmental seminar course with a focus on formal presentation in settings related to health care. This course will be beneficial to students planning professions in the health sciences where responsibilities include public instruction and exposition and for those preparing for capstone presentations in the Department of Psychological Sciences programs. Activities include: 1. Readings from McKerrow et al. text, 2. Class discussions related to communication competence in differing communication settings, 3. Application opportunities to give speeches, to work in groups, and relate with others in one-on-one situations, 4. Written assignments. Counts as SAGES Departmental Seminar. Prereq: Completion of 100 level first year seminar in USFS, FSSC, FSNA, FSSO, FSSY, or FSCS and either COSI 109 or PSCL 101.

COSI 302. Instrumental Measurements in Speech Sciences. 3 Units.
This course will provide hands on experience on techniques for instrumental measurements of speech and voice parameters, for applications to assessment and diagnosis of speech and voice disorders, to linguistic analysis of speech parameters (prosodic and segmental), and to speech production modeling. In particular, instrumental measures of voice parameters will be carried out by Electroglography; evaluation of Voice Range Profile and of perturbation of frequency (jitter) and amplitude (shimmer) of the laryngeal waveform, by dedicated KayPentax software (Visi-pitch and Voice Range Profile) and by Praat software; spectrographic analyses will be carried out by Praat software, and articulographic measurements will be performed by an AG200 Electromagnetic Articulograph. Nasalance will be measured by a KapyPentax nasometer. Emphasis on use rather than theory. All instrumentation is available at the Case Speech Production Lab. Recommended preparation: COSI 211, COSI 321/421, and COGS 203, or bases in phonetics, linguistics and speech science; also Physics and Engineering instrumentation courses are good preliminaries to this course. Offered as COSI 302 and COSI 402.

COSI 313. Language Development. 3 Units.
Language acquisition theory and stages of development of syntax, semantics, pragmatics, and phonology in children. Contributions of biological, social, cognitive and environmental factors to process of language development. Information on language variation in multicultural populations. Open to majors and non-majors. Recommended prerequisite: Child Psychology. Offered as COSI 313 and COSI 413.

COSI 321. Speech and Hearing Science. 3 Units.
The course will focus on the aspects of normal speech production and perception and hearing perception. The purpose of this course is to provide a foundation in normal aspects of oral communication that will prepare students for advance study in the assessment and management of disorders of speech and hearing perception. Topics to be covered include motor speech control, aeromechanics, basic acoustics, phonatory acoustics, speech and hearing acoustics, psychoacoustics, and speech and hearing perception. Recommended preparation: COSI 325. Offered as COSI 321 and COSI 421.

COSI 325. Anatomy and Physiology of Speech and Hearing Mechanism. 3 Units.
The course will focus on normal anatomy and physiology of the body systems involved in the processes of speech, language, hearing, and swallowing including the following: the auditory, respiratory, phonatory, articulatory, resonatory, and nervous systems. In part, the course material will be presented in a problem-based learning format. That is, normal aspects of human anatomy and physiology will be discussed in the context of the disorders that affect the processes of human communication and swallowing.

COSI 332. Persuasion. 3 Units.
This survey course explores the history, theories, and dynamics of persuasion. There is an extensive focus on theoretical models of attitude change. Persuasion also plays a strong role in everyday aspects of our culture. Along these lines, we will investigate persuasion activities in everyday life from compliance gaining to media campaigns. Learning is conveyed through lecture, activities, and observation of the student's everyday life. At the end of the semester, the astute student will literate in a variety of persuasion strategies and dynamics.

COSI 340. Health Communication. 3 Units.
Various communication processes assume a central role in the acquisition and enactment of health care. This course examines communication activity across a broad range of health care contexts. Attention will be given to provider-client communication, communication, and ethical concerns, persuasive health promotion efforts, media impact on health, and basics in health communication methodology and research. Students will consider source, message, and receiver aspects of health communication as well as cultural and illness-specific issues. Prerequisite of COSI 101 for 300 - level only. Offered as COSI 340 and COSI 440. Prereq: COSI 101.

COSI 345. Communication and Aging. 3 Units.
The normal and abnormal psychobiological changes that occur during aging and their effects on communication are addressed, as are communicative interaction styles, disordered communication, and rehabilitation practices. Graduate students are given an opportunity to incorporate information from their own disciplines in a special project, where appropriate. Offered as COSI 345 and COSI 445. Counts as SAGES Departmental Seminar.

COSI 352. Introduction to Clinical Practice in Speech-Language Pathology. 3 Units.
Clinical assessment and teaching procedures as well as the role of research/theory in clinical practice. Procedures to observe, measure, analyze communication skills. Practical application through case studies. Students complete 25 hours of observation of speech/language assessment and intervention. Prereq: COSI 211 or COSI 313.

COSI 355. Introduction to Linguistics. 3 Units.
This course provides an introduction to linguistics, with application to clinical assessment, diagnosis and therapy of language disorders. In particular, the course provides an introduction to theory and methods of linguistics: universal properties of human language; phonetic, phonological, morphological, syntactic, and semantic structures and analysis; nature and form of grammar.
COSI 357. Acquired Neurogenic Communication Disorders. 3 Units.
This course is designed to provide knowledge about the theoretical foundations, etiologies, and characterizations of acquired language-based and cognitive-communication disorders in adults. The organization of the course is designed so that we will discuss communication disorders typically associated with left hemisphere lesions (e.g., aphasia), right hemisphere lesions (e.g., RHD), frontal lobe lesions (e.g., traumatic brain injury) and mesial temporal lesions (e.g., dementia). This course is intended to provide students with a framework for considering communication disorders of diverse medical etiologies rather than specific impairment types. The course is meant to provide information that can be used as a foundation for a clinically applied course in acquired language disorders. The course will focus on critical thinking, professional presentation (both oral and written), and critical consumption of research. Recommended preparation: Instructor consent for COSI 457 only. Offered as COSI 357 and COSI 457. Prereq: COSI 109.

COSI 370. Introduction to Audiology. 3 Units.
Disorders of hearing, assessment of hearing; including behavioral and objective measures; intervention strategies; and identification programs. Offered as COSI 370 and COSI 470. Prereq: COSI 325.

COSI 390. Independent Study. 1 - 6 Unit.
Individual study, under the guidance of a faculty member, involving specific programs of reading, research and special projects.

COSI 395. Capstone and Honors Program. 3 Units.
Supervision in carrying out an independent research study in the student's area of interest. Offered every semester. Any student majoring in communication sciences (COSI) may take this course to fulfill the capstone requirement; qualified students may take this course to fulfill the capstone requirement AND to graduate with honors. During their Junior year, qualified COSI majors are encouraged to apply to the department's Honors Program, which leads to a B.A. with Honors. The program's purpose is to provide students with an intensive, supervised research experience in areas of their choice. The program consists of PSCL 375 and COSI 295 and begins in the junior year, when students receive instruction in research design and methodology. This provides the foundation for students to work under close supervision with a department faculty member during the senior year. At the end of the semester, the research project is written in scholarly form, and presented for consideration of graduation with Honors. Junior majors with a minimum 3.25 average in COSI major courses are a 3.0 overall GPA may apply. The Honors Program requires a great deal of work, and only students with a serious interest in behavioral sciences should apply. Counts as SAGES Senior Capstone. Prereq: (STAT 201 or PSCL 282) and PSCL 375.

COSI 402. Instrumental Measurements in Speech Sciences. 3 Units.
This course will provide hands on experience on techniques for instrumental measurements of speech and voice parameters, for applications to assessment and diagnosis of speech and voice disorders, and to speech production modeling. In particular, instrumental measures of voice parameters will be carried out by Electroglottography; evaluation of Voice Range Profile and of perturbation of frequency (jitter) and amplitude (shimmer) of the laryngeal waveform, by dedicated KayPentax software (Visi-pitch and Voice Range Profile) and by Praat software; spectrographic analyses will be carried out by Praat software, and articulographic measurements will be performed by an AG200 Electromagnetic Articulograph. Nasalance will be measured by a KapyPentax nasometer. Emphasis on use rather than theory. All instrumentation is available at the Case Speech Production Lab. Recommended preparation: COSI 211, COSI 321/421, and COGS 203, or bases in phonetics, linguistics and speech science; also Physics and Engineering instrumentation courses are good preliminaries to this course. Offered as COSI 302 and COSI 402.

COSI 413. Language Development. 3 Units.
Language acquisition theory and stages of development of syntax, semantics, pragmatics, and phonology in children. Contributions of biological, social, cognitive and environmental factors to process of language development. Information on language variation in multicultural populations. Open to majors and non-majors. Recommended prerequisite: Child Psychology. Offered as COSI 313 and COSI 413.

COSI 421. Speech and Hearing Science. 3 Units.
The course will focus on the aspects of normal speech production and perception and hearing perception. The purpose of this course is to provide a foundation in normal aspects of oral communication that will prepare students for advance study in the assessment and management of disorders of speech and hearing perception. Topics to be covered include motor speech control, aeromechanics, basic acoustics, phonatory acoustics, speech and hearing acoustics, psychoacoustics, and speech and hearing perception. Recommended preparation: COSI 325. Offered as COSI 321 and COSI 421.

COSI 431. Medical Aspects of Developmental Disabilities: Theory and Practice. 2 Units.
The practicum provides structured training activities to help the student become proficient in birth to three assessment and intervention and infant and toddler development. This intensive training experience will provide skills that students need when working in early intervention settings. Guided observation of children and developmental domains, parent-child interaction, and family based assessment will be included.

COSI 440. Health Communication. 3 Units.
Various communication processes assume a central role in the acquisition and enactment of health care. This course examines communication activity across a broad range of health care contexts. Attention will be given to provider-client communication, communication, and ethical concerns, persuasive health promotion efforts, media impact on health, and basics in health communication methodology and research. Students will consider source, message, and receiver aspects of health communication as well as cultural and illness-specific issues. Prerequisite of COSI 101 for 300 - level only. Offered as COSI 340 and COSI 440.
COSI 444. Evidence Based Practice in Communication Disorders. 4 Units.
Evidence-based practice is the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual clients. Having its origins in the fields of medicine and clinical epidemiology, EBP is now an essential component to clinical practice in speech-language pathology. The goal of COSI 444 is to instill in you a career-long desire to seek out high-quality relevant evidence pertinent to the clinical questions that affect your practice. To do this, you must first know how to find the evidence and evaluate the quality of evidence available. This course is intended to demystify the research process so that you can become critical consumers of the research literature in our field.

COSI 445. Communication and Aging. 3 Units.
The normal and abnormal psychobiological changes that occur during aging and their effects on communication are addressed, as are communicative interaction styles, disordered communication, and rehabilitation practices. Graduate students are given an opportunity to incorporate information from their own disciplines in a special project, where appropriate. Offered as COSI 345 and COSI 445. Counts as SAGES Departmental Seminar.

COSI 452A. Graduate Clinical Practicum I: Case Management. 1 Unit.
Addresses professional issues in speech-language pathology including case management, clinical effectiveness, counseling and working with families from diverse backgrounds. Four to ten hours of clinic contact per week at the Cleveland Hearing and Speech Center. (Maximum of 2 credits.) Recommended preparation: COSI 352 and COSI 413.

COSI 452B. Graduate Clinical Practicum II: Professional Issues. 1 Unit.
Addresses professional issues in speech-language pathology including case management, managed health care, ethics and interviewing. Four to ten hours of clinic contact per week at the Cleveland Hearing and Speech Center. (Maximum of 2 credits.) Recommended preparation: COSI 352, COSI 413, COSI 452A, and COSI 453.

COSI 452C. Graduate Clinical Practicum III: Special Populations. 1 Unit.
Addresses professional issues in speech-language pathology including case management, special clinical populations, collaborating with other professionals, teaming, leadership, and use of technology. Fifteen to thirty hours of clinic contact per week at area skilled nursing facilities, hospitals, rehab centers, early intervention centers, centers for developmentally disabled, private practices, etc. (Maximum of 2 credits.) Recommended preparation: COSI 352, COSI 452A, COSI 452B, COSI 453, and COSI 456.

COSI 452E. Graduate Clinical Practicum V: Medical Speech Pathology. 1 Unit.
Addresses professional issues in speech-language pathology including case management, special clinical populations, collaborating with other professionals, documentation, managed health care, and use of technology. Fifteen to thirty hours of clinic contact per week at area skilled nursing facilities, hospitals. (Maximum of 2 credits.) Recommended preparation: COSI 352, COSI 452A, COSI 452B, COSI 452C, COSI 453, and COSI 456.

COSI 453. Articulation and Phonology Disorders. 3 Units.
Overview of normal speech sound development and characterization of children with speech sound disorders. Distinctions between phonology and articulation are drawn. Theoretical as well as assessment and treatment issues are addressed.

COSI 455. Fluency Disorders. 3 Units.
Stuttering and related disorders of rhythm and prosody in terms of the symptomatology, etiology, measurement, and treatment of nonfluent speaking behavior.

COSI 456. Child Language Disorders. 3 Units.

COSI 457. Acquired Neurogenic Communication Disorders. 3 Units.
This course is designed to provide knowledge about the theoretical foundations, etiologies, and characterizations of acquired language-based and cognitive-communication disorders in adults. The organization of the course is designed so that we will discuss communication disorders typically associated with left hemisphere lesions (e.g., aphasia), right hemisphere lesions (e.g., RHD), frontal lobe lesions (e.g., traumatic brain injury) and mesial temporal lesions (e.g., dementia). This course is intended to provide students with a framework for considering communication disorders of diverse medical etiologies rather than specific impairment types. The course is meant to provide information that can be used as a foundation for a clinically applied course in acquired language disorders. The course will focus on critical thinking, professional presentation (both oral and written), and critical consumption of research. Recommended preparation: Instructor consent for COSI 457 only. Offered as COSI 357 and COSI 457.

COSI 464. Case Studies in Communication Disorders: Diagnosis and Treatment. 3 Units.
Diagnosis as a clinical skill involving scientific hypothesis testing with clinical problem solving. The course includes academic learning combined with diagnostic clinic experiences. Overview of psychometric principles, survey of psychological communication tests, and measurements. Section on non-biased assessment. Instruction and practice in effective family interviewing techniques. Prereq: COSI 453 and COSI 456

COSI 470. Introduction to Audiology. 3 Units.
Disorders of hearing, assessment of hearing; including behavioral and objective measures; intervention strategies; and identification programs. Offered as COSI 370 and COSI 470. Prereq: COSI 325.

COSI 556. Language Disorders 2: Language and Literacy. 3 Units.
This course focuses on research-based theories of reading, cognition, language, and learning disorders in the school-age and adolescent student. Language development of the older child during the school age and adolescent years will be reviewed. Topics include the development of metalinguistic skills, the expanding lexicon, narration and discourse, and advances in syntax and morphology. The relationship of spoken language to literacy will be discussed. The course will examine common language, literacy and learning disabilities during the school age years. The student will explore interventions for word skills, reading decoding and comprehension, oral expression, vocabulary, and written languages as they apply to the Speech Language Pathologist. Assessment and intervention strategies for the school-age child and adolescent with a language/learning disorder are included. The class format includes lectures, discussions of case studies, and experiential learning through the observation of therapy with the school age/adolescent student. Prereq: COSI 456.
COSI 557. Acquired Adult Language Disorders. 3 Units.
A model relating communication impairment to activities of daily living and quality of life will serve as the study of acquired neurogenic communication disorders in adults. The focus will be on dementia, aphasia, and the communication disorders associated with traumatic brain injury and right hemisphere stroke. Knowledge about the biological basis of neurogenic communication disorders will be applied in discussion on assessment and intervention for these disorders. Prereq: COSI 405 or equivalent.

COSI 560. Medical Aspects of Speech Pathology I: Voice Disorders. 3 Units.
Aspects of normal and abnormal voice production, evaluation and management of various voice and resonance disorders.

COSI 561. Med Aspects of Speech Path II: Neuromotor and Craniofacial Anomalies. 4 Units.
Speech disorders resulting from conditions acting on motor speech production including dysarthria and apraxia will be discussed. The speech production system, diseases and acquired and congenital neuropathological conditions that affect motor process and resulting speech disorders of phonation, articulation, resonance and prosody will be reviewed. Also covered will be the speech, language and hearing disorders stemming from craniofacial anomalies; cleft lip and palate. Principles and methods of assessment and treatment within an interdisciplinary rehabilitation framework will be reviewed for both types of disorders. Prereq: COSI 321 or COSI 421 and COSI 405 or equivalent.

COSI 562. Medical Aspects of Speech Pathology III: Dysphagia. 3 Units.
Course relates to medical speech-language pathology and includes analysis of clinical problems involving dysphagia in high risk populations. Course focus is on the anatomy and physiology of the normal swallow, dysphagia, early identification and prevention, the clinical swallow assessment, instrumental assessment and intervention in pediatric and adult populations.

COSI 580. Aural Rehabilitation. 3 Units.
The effects of hearing impairment, especially related to speech perception and language processing. Remediation and intervention strategies for hearing impaired children and adults, including speech reading, auditory training, and the use of hearing aids.

COSI 600. Special Problems and Topics. 1 - 3 Unit.
Topics and instructors by arrangement of the department chair.

COSI 601. Directed Study and Research. 1 - 6 Unit.
Individual study and research under the direction of a faculty member.

COSI 651. Thesis M.A.. 1 - 6 Unit.

COSI 690. Supervised Classroom Teaching. 3 Units.
Required of all doctoral students. Teaching of an undergraduate course planned in conjunction with a supervising faculty member. Follows the doctoral student's earlier experience of observing and assisting a faculty member in classroom teaching.

COSI 701. Dissertation Ph.D.. 1 - 9 Unit.
Prereq: Predoctoral research consent or advanced to Ph.D. candidacy milestone.

PSCL Courses
PSCL 101. General Psychology I. 3 Units.
Methods, research, and theories of psychology. Basic research from such areas as psychophysiology, sensation, perception, development, memory, learning, psychopathology, and social psychology.

PSCL 102. General Psychology II. 3 Units.
The applications of psychological research in normal problems of adjustment. Topics include: coping with anxiety, romance and marriage, and interpersonal behavior.

PSCL 230. Child Psychology. 3 Units.
Basic facts and principles of psychological development from the prenatal period through adolescence. Recommended preparation: PSCL 101.

PSCL 282. Quantitative Methods in Psychology. 3 Units.
The theory and application of basic methods used in the analysis of psychological data. Not available for credit to students who have completed STAT 201 or ANTH 319. Counts for CAS Quantitative Reasoning Requirement.

PSCL 313. Psychology of Personality. 3 Units.
The development and organization of personality; theories of personality and methods for assessing the person; problems of personal adjustment.

PSCL 315. Social Psychology. 3 Units.

PSCL 317. Health Psychology. 3 Units.
Examines psychological processes that affect physical health. Covers the physiological factors affecting the immune system, chronic physical disorders, pain, compliance with prescribed medical treatments, the effects of stress and coping, the effects of the patient-physician interaction, and the psychological aspects of the hospital and the health care systems. Recommended preparation: PSCL 101.

PSCL 321. Abnormal Psychology. 3 Units.

PSCL 325. Psychotherapy and Personality Change. 3 Units.
Three methods of psychotherapy (behavioral, psychoanalytic, and client-centered) are discussed. The therapy techniques and the manner by which personality change is effected are examined. Recommended preparation: PSCL 101.

PSCL 329. Adolescence. 3 Units.
Psychological perspectives on physical, cognitive, and social development. Recommended preparation: PSCL 101.

PSCL 334C. Seminar and Practicum: Hospitalized Children. 3 Units.
Supervised field placement and attendance at staff conferences in various child and adolescent settings. Regular seminar meetings. Prereq: PSCL 230.

PSCL 335C. Seminar and Practicum: Hospitalized Child. 3 Units.
Supervised field placement and attendance at staff conferences in various child and adolescent settings. Regular seminar meetings. Prereq: PSCL 230 and Junior or Senior Status.

PSCL 338. Seminar and Practicum in Adolescents. 3 Units.
Supervised field placement and attendance in early childhood, child, and adolescent settings including preschools, schools, hospitals, and neighborhood centers. This class is used to fulfill requirements by the Ohio Department of Education teacher licensure program. Recommended preparation: PSCL 101, EDUC 301, EDUC 304, and permission of program director. Offered as EDUC 338, PSCL 338, and SOCI 338.
PSCL 344. Developmental Psychopathology. 3 Units.
This course will focus on the interplay of biological, psychological, familial, and social determinants of disorders ranging from autism to delinquency and bulimia. Recommended preparation: PSCL 230 or PSCL 321.

PSCL 350. Behavior Genetics. 3 Units.
Examines the impact of both nature and nurture on human behavior. Basic quantitative genetic methodology will be covered. Current family, twin and adoption studies in the areas of personality, intelligence, alcoholism, criminality, and psychopathology will be reviewed. Recommended preparation: PSCL 101.

PSCL 352. Physiological Psychology. 3 Units.
This course is designed to teach the fundamentals of neural communication and central nervous system structure. Special attention is placed on common neurological illnesses and their psychopharmacological treatments. Neural systems underlying sensory/perceptual, motor, and higher-order cognitive processes are also explored. Prereq: PSCL 101.

PSCL 353. Psychology of Learning. 3 Units.
The basic methods in the study of learning. The major theories proposed to account for the learning process. Development of the fundamental concepts and principles governing the learning process in both humans and lower animal. Recommended preparation: PSCL 101.

PSCL 355. Sensation and Perception. 3 Units.

PSCL 357. Cognitive Psychology. 3 Units.

PSCL 359. Adult Development and Aging. 3 Units.
An overview of concepts and research relating to adult development and aging. The lifespan perspective will be used in examining major developmental paradigms. Personality and cognitive lines of development will be traced across the lifespan. Data from both longitudinal and cross-sectional studies will be analyzed. Both normal and pathological aging will be discussed. Special emphasis will be given to areas of cognitive deterioration in aging. Implications for optimal adult development and aging will also be discussed.

PSCL 370. Human Intelligence. 3 Units.
Survey of individual differences in human intellect including construction and administration of intelligence tests, theories and models of intelligence, and the role of heredity and environment in intelligence and the development of intelligence. This course will also examine the relationships of cognitive abilities to intelligence and human to artificial intelligence. Recommended preparation: PSCL 101.

PSCL 375. Research Design and Analysis. 3 Units.

PSCL 379. Neurodevelopmental Disabilities. 3 Units.
Ways in which neurobehavioral development can go awry, the causes of such deviations, and their consequences. The course builds on basic psychological and neuroscience concepts to explore the manner in which developmental disabilities occur, ways of preventing disabilities, and approaches to ameliorating and managing disabling conditions. Recommended preparation: PSCL 101 and PSCL 230.

PSCL 382. Psychological Measurement. 3 Units.

PSCL 388. Human Sexual Behavior. 3 Units.
Sex is approached as a form of personal and interpersonal behavior. A broad range of theories from social psychology will be used to explain human sexual behavior, and these will be evaluated by using facts and findings from recent research studies. Topics include sexual relationships, gender differences, promiscuity, rape and coercion, finding and choosing sex partners, sexual risk-taking, harassment, sexual identity and orientation, cultural influences and differences, evolution of sexual motivations, prostitution, pornography, and love. Prereq: PSCL 101 and PSCL 315.

PSCL 389. Emotion and Emotion Regulation. 3 Units.
This course will focus on academic research associated with emotional processes and emotion regulation. Specifically, we will answer questions like: What are emotions, and why are they important? How are emotions communicated, and how do researchers measure them? How do emotions influence one’s thinking ability, and visa-versa? What is emotion regulation? How do people differ in terms of their overall happiness and well-being, the degree to which they seek/avoid positive/negative experiences, and how they try to control their emotions? And what brain mechanisms are involved in emotional processing and emotion regulation? This course is also intended to help students read research in a thorough, critical manner, which may have a positive impact on students considering an academic career. Prereq: PSCL 101 and PSCL 352.

PSCL 390. Seminars in Psychology. 1 - 3 Unit.
Surveys of special subject areas. Topics vary in response to faculty and student interests. Small group discussion. Prerequisite depends on content.

PSCL 391. Psychology Capstone Research Using Data Archives. 3 Units.
In this course, each student will derive and address a research question by identifying and analyzing archived publicly available data. Successful completion of the course will require: training in ethical research involving human participants; a critical review of the literature on a specific area of psychology with the goal of creating a research question; identification of a set of variables in a publicly available data set that can be used to address the research question, a final written research report in a format acceptable for publication in a psychological research journal, and an oral presentation of the research. Counts as SAGES Senior Capstone. Prereq: PSCL 101 and PSCL 282 or equivalent (ANTH 319, STAT 201), and PSCL 375.
PSCL 392. Capstone: Positive Psychology and Character Strengths. 3 Units.
This seminar-based course is designed to provide a senior capstone experience in the area of positive psychology and character strengths. Students will focus on one specific character strength or positive psychology concept for the class project. The project will include a literature review and critique as well as a self-reflective component. Students will present their projects in two formats: a classroom-based lecture presentation and a literature review (15-20 pages). Class periods will include a blend of lecture, discussion, and student presentations. All students will be assigned to small groups for classroom-based discussions. Assignments are designed to help students develop their projects and will focus on self-reflection, literature review skills, and effective strategies for writing, presenting, and evaluating the work of others. Counts as SAGES Senior Capstone. Prereq: Students must be seniors.

PSCL 393. Experimental Child Psychology. 3 Units.
The development of behavior from birth to adolescence. Growth of basic processes such as perception, learning, memory, intelligence, and language in the light of current theoretical models. Recommended preparation: PSCL 101.

PSCL 394. Psychology Capstone Seminar: Current Problems. 3 Units.
This seminar course will revolve around the identification and critical examination of current problems in society. Insights gained from psychological research will be applied to better understand these problems. Successful completion of the course will require critical analysis of published research, integration of information from different areas of psychology and from different disciplines, an oral presentation, and a final written research report including a literature review. Counts as SAGES Senior Capstone. Prereq: PSCL 375.

PSCL 395. Capstone and Honors Program. 3 Units.
Supervision in carrying out an independent research study in the student's area of interest. Counts as SAGES Senior Capstone. Prereq: PSCL 375.

PSCL 396. Anxiety and Depression: Symptoms, Etiology, and Treatment. 3 Units.
A research-based and writing-intensive presentation of current knowledge regarding the symptoms, etiology, and treatment of anxiety disorders and mood disorders. Counts as SAGES Departmental Seminar.

PSCL 397. Independent Study. 1 - 3 Unit.
Individual study involving specific programs of reading, research, and special projects. Prereq: PSCL 101.

PSCL 398C. Child Policy Externship and Capstone. 3 Units.
Externships offered through CHST/ANTH/PSCL 398C give students an opportunity to work directly with professionals who design and implement policies that impact the lives of children and their families. Agencies involved are active in areas such as public health, including behavioral health, education, juvenile justice, childcare and/or child welfare. Students apply for the externships, and selected students are placed in local public or nonprofit agencies with a policy focus. Each student develops an individualized learning plan in consultation with the Childhood Studies Program faculty and the supervisor in the agency. Offered as CHST 398C, ANTH 398C, and PSCL 398C. Counts as SAGES Senior Capstone. Prereq: CHST 301.

PSCL 402. Cognition and Information Processing. 3 Units.
Aspects of cognition beyond the area of sensation and perception, involving symbolic processes, especially problems of meaning, conceiving, reasoning, judging, and thinking.

PSCL 403. Physiological Foundations of Behavior. 3 Units.
Fundamental neurological processes controlling behavior. Prereq: Graduate Standing or Requisites Not Met permission.

PSCL 404. Learning Theory. 3 Units.
The research literature in learning; theoretical formulations of contemporary learning theorists. Limited to graduate students.

PSCL 405. Personality Theory. 3 Units.
General problems and systematic points of view in the analysis of personality. Limited to graduate students.

PSCL 407. Research Design and Quantitative Analysis I. 3 Units.
Intermediate research design and statistical analysis used in psychological research. Statistical inference from single variables, elementary principles of probability, correlation and regression. Recommended preparation: PSCL 282.

PSCL 408. Research Design and Quantitative Analysis II. 3 Units.

PSCL 409. Advanced Social Psychology. 3 Units.
This seminar-based course provides a broad, graduate-level overview of the field of social psychology. The course draws on theory and basic research in social and personality psychology to teach basic principles of human nature that can be applied to daily life, research, and clinical/applied work. Major topic areas include the self (e.g., self-regulation; self-evaluation), social cognition and relationships (e.g., social comparison; transgression), and group processes (e.g., social influence; prejudice). The interface between social and personality psychology will also receive attention.

PSCL 410. Developmental Psychology. 3 Units.
The research literature and theoretical formulation in the area of developmental psychology. Limited to graduate students.

PSCL 412. Measurement of Behavior. 3 Units.

PSCL 418. History and Systems. 3 Units.
Historical antecedents of modern psychology.

PSCL 424. Clinical Interviewing. 3 Units.
Introduction to diagnostic and therapeutic interviewing.

PSCL 425. Methods of Assessment I. 3 Units.
Limited to graduate students in clinical psychology. Recommended preparation: Graduate standing in psychology with department permission.

PSCL 426. Methods of Assessment II. 3 Units.
Methods of psychological assessment, emphasizing personality and family function in childhood and adulthood. Recommended preparation: Limited to Grad students in Clinical Psychology. Requires approval of the Director of Clinical Training.

PSCL 429. Practicum in Assessment I. 1 Unit.

PSCL 430. Practicum in Assessment II. 1 Unit.
Recommended preparation: Approval of the Director of Clinical Training or concurrent enrollment in PSCL 426.
PSCL 431. Supervised Field Placement Year 2. 0 Units.
Supervised training in clinical psychology in agency, hospital, or university settings. Required in Fall and Spring terms of all second year students in the clinical psychology training program. Recommended preparation: PSCL 425, PSCL 426.

PSCL 444. Developmental Psychopathology. 3 Units.
This course will focus on the interplay of biological, psychological, familial, and social determinants of disorders ranging from autism to delinquency and bulimia.

PSCL 451. Special Topics in Psychology. 1 Unit.
These 1 credit mini-courses should provide enjoyable opportunities for students to explore interesting material related to clinical psychology that has not been covered in other required courses. A primary goal is to stimulate interest and discussion in the area. Thus, students will not be expected to write term papers or take any exams. In terms of background reading, students should be provided with roughly one journal article per hour of class meeting. The course is graded pass/no pass, and grading will be based on class attendance and class participation.

PSCL 453. Seminars in Psychology. 1 - 3 Unit.
A special problem or topic. Content varies with student and faculty interest. Recent offerings: creative thinking in research, community psychological evaluation of community processes, experimental and computer methods, consultation, and psychoanalytic ego psychology.

PSCL 469. Psychology of Aging. 3 Units.
Normal psychological development in later life; psychological development in the oldest old; definitions and assessment of successful aging.

PSCL 497. Graduate Independent Study. 1 - 9 Unit.
Independent research and reading programs with individual members of the faculty.

PSCL 501. Seminar: Pediatric Psychology. 1 - 3 Unit.
Seminar on current research topics, research design and methodological issues related to pediatric psychology. Introductory lectures provide an overview of research populations, methods, and practical issues appropriate to research with pediatric populations.

PSCL 502. Seminar: Pediatric Psychology. 1 - 3 Unit.
Seminar examining specific topics in pediatric psychology. Topics will deal with issues of infant development, Infants at risk for disability, neuropsychology and learning disabilities, and childhood psychopathology. Recommended preparation: Limited to Graduate students in Psychology department.

PSCL 510. Psychology and Diversity. 3 Units.
Diversity and multicultural in psychological theory, research and practice.

PSCL 524. Advanced Psychopathology. 3 Units.
Theoretical issues and current research data bearing on major patterns of psychological disturbance.

PSCL 525. Ethical and Professional Issues in Psychology. 3 Units.
Consideration of legal and ethical principles in research and practice in clinical psychology and contemporary controversies in professional psychology. Recommended preparation: Graduate standing in Psychology

PSCL 529A. Practicum in Intervention I: Behavior Therapy. 1 Unit.
Recommended Preparation: Graduate standing in clinical psychology.

PSCL 529B. Practicum in Intervention I: Psychodynamic. 1 Unit.
Recommended preparation: Graduate standing in clinical psychology.

PSCL 530A. Practicum in Intervention II: Behavior Therapy. 1 Unit.
Recommended preparation: Graduate standing in clinical psychology.

PSCL 530C. Practicum in Intervention II: Psychodynamic. 1 Unit.
Recommended preparation: Graduate standing in clinical psychology.

PSCL 531A. Seminar in Intervention I: Behavior Therapy. 2 Units.
Theoretical issues and research on psychological interventions. Recommended preparation: Graduate standing in clinical psychology.

PSCL 531C. Seminar in Intervention I: Psychodynamic. 2 Units.
Theoretical issues and research on psychological interventions. Recommended preparation: Graduate standing in clinical psychology.

PSCL 532A. Seminar in Intervention II: Behavior Therapy. 2 Units.
Theoretical issues and research on psychological interventions. Recommended preparation: Graduate standing in clinical psychology.

PSCL 532C. Seminar in Intervention II: Psychodynamic. 2 Units.
Theoretical issues and research on psychodynamic intervention. Recommended preparation: PSCL 531C and graduate standing in clinical psychology.

PSCL 535. Child and Family Intervention. 2 Units.
A course for advanced clinical graduate students that covers psychodynamic and cognitive behavioral approaches for working with children and adolescents and systems approaches for working with families.

PSCL 536. Advanced Child and Family Intervention. 2 Units.
A course for advanced clinical graduate students that covers evidence-based approaches to child and family therapy as well as parent training. Special emphasis on empirically guided treatment planning and outcome evaluation.

PSCL 537. Child and Family Case Seminar I. 1 Unit.
Clinical graduate students in child and family field placements present and receive group supervision on ongoing cases.

PSCL 538. Child and Family Case Seminar II. 1 Unit.
Clinical graduate students in child and family field placements present and receive group supervision on ongoing cases.

PSCL 539. Supervised Field Placement Year 3. 0 Units.
Supervised training in clinical psychology in agency, hospital, or university settings. Required in Fall and Spring terms of all third year students in the clinical psychology training program. Recommended preparation: PSCL 531A, PSCL 532A.

PSCL 540. Supervised Field Placement Year 4. 0 Units.
Supervised training in clinical psychology in agency, hospital, or university settings. Required in Fall and Spring terms of all fourth year students in the clinical psychology training program. Recommended preparation: PSCL 531A, PSCL 532A.

PSCL 601. Special Problems. 1 - 18 Unit.
(Credit as arranged.)

PSCL 651. Thesis M.A.. 1 - 18 Unit.
(Credit as arranged.)

PSCL 700. Internship. 0 Units.
Full-time predoctoral internship in clinical psychology. Required of all students in clinical psychology program. Registration requires written consent of director of clinical psychology training and must be for one calendar year.

PSCL 701. Dissertation Ph.D.. 1 - 9 Unit.
(Credit as arranged.) Prereq: Predoctoral research consent or advanced to Ph.D. candidacy milestone.
Computer Science

The College of Arts and Sciences awards the Bachelor of Arts degree in computer science. The required courses for the major and minor are offered by the Department of Electrical Engineering and Computer Science in the Case School of Engineering.

For details about the department’s undergraduate programs, please consult the Department of Electrical Engineering and Computer Science (http://bulletin.case.edu/schoolofengineering/elecengcompsci/#undergraduatetext) section of this bulletin.

Department of Dance

The Department of Dance offers education and participation in many aspects of dance, with course offerings in modern dance and ballet technique, choreography, kinesiology, history, production and more. Students have the opportunity to perform onstage as well as to serve on the technical crews in dance concerts. The high ratio of faculty to students ensures that students will be able to work closely with highly skilled professionals. The department treats all performances as educational experiences and welcomes the participation of all students, particularly in Mather Dance Collective (MaDaCol), regardless of their academic majors and career goals.

Graduates of the dance program are currently employed as modern dance company members (regionally and nationally), company directors/choreographers, and dance production managers, and as teachers, program directors, and administrators in colleges and universities. Others have transitioned into such disciplines as physical therapy and massage therapies.

Undergraduate Programs

Major

Degree requirements for the major in Dance, Bachelor of Arts degree, are as follows:

Technique Core (all but 103 and 160 are repeatable for credit as advised and/or desired) 21

Modern Techniques: By advisement and placement, select from among the 3 credit and floating credit classes below (15 credits):

- DANC 103  First-Year Modern Dance Techniques I
- DANC 104  First-Year Modern Dance Techniques II
- DANC 203  Second-Year Modern Dance Techniques I
- DANC 204  Second-Year Modern Dance Techniques II
- DANC 303  Third-Year Modern Dance Techniques I
- DANC 304  Third-Year Modern Dance Techniques II
- DANC 317  Advanced Modern Dance Technique I
- DANC 318  Advanced Modern Dance Technique II
- DANC 403  Fourth-Year Modern Dance Technique I
- DANC 404  Fourth-Year Modern Dance Technique II
- DANC 417  Advanced Modern Dance Technique I
- DANC 418  Advanced Modern Dance Technique II

Ballet Techniques: By advisement and placement, selected from among the 3 credit and floating credit classes listed below (6 credits):

- DANC 160  Introduction to Ballet Technique I
- DANC 161  Introduction to Ballet Technique II
- DANC 260  Second-Year Ballet Technique I
- DANC 261  Second-Year Ballet Technique II
- DANC 360  Ballet Technique for Modern Dance Students I
- DANC 361  Ballet Technique for Modern Dance Students II
- DANC 460  Ballet Technique for Modern Dance Students I
- DANC 461  Ballet Technique for Modern Dance Students II

Core Theory and Creative Research Requirements 9

- DANC 355  History of Modern Dance

Select two from among:

- DANC 121  Dance in Culture - Ethnic Forms
- DANC 122  Dance in Culture - Theatrical Forms
- DANC 314  The Craft of Choreography
- DANC 345  Kinesiology for Dance

Additional Core Requirements (choose 3 from below): 9

- DANC 121  Dance in Culture - Ethnic Forms
- DANC 122  Dance in Culture - Theatrical Forms
- DANC 237  Religion and Dance in South Asia
- DANC 315  Choreography and Music
- DANC 324  Dance Production Resources
- DANC 335  Modern Dance Pedagogy
- DANC 345  Kinesiology for Dance
- DANC 346  Topics in Dance Medicine, Science, and Wellness
- DANC 396  SAGES Senior Capstone in Dance

Additional Performance/Physical Requirements 2

- DANC 385  Production Practicum (repeatable for credit)
- DANC 386  Rehearsal and Performance

Total Units 41

Departmental Honors

All majors are encouraged to apply for DANC 397 Honors Studies I and DANC 398 Honors Studies II in their final year. This adds 6 hours to the total.

Minor

- DANC 103  First-Year Modern Dance Techniques I 3
- DANC 104  First-Year Modern Dance Techniques II 3
- DANC 203  Second-Year Modern Dance Techniques I 3
- DANC 204  Second-Year Modern Dance Techniques II 3
- Two of the following*: (6) 6
  - DANC 160  Introduction to Ballet Technique I
  - DANC 161  Introduction to Ballet Technique II
  - DANC 260  Second-Year Ballet Technique I
  - DANC 261  Second-Year Ballet Technique II
  - DANC 303  Third-Year Modern Dance Techniques I
  - DANC 304  Third-Year Modern Dance Techniques II
  - DANC 360  Ballet Technique for Modern Dance Students I
  - DANC 361  Ballet Technique for Modern Dance Students II

* Other classes may be substituted by advisement

Total Units 18
Graduate Programs

Master of Arts

Although the graduate dance program is geared toward the Master of Fine Arts degree (see below), all graduate students begin in the MA program. Advancement to the MFA program occurs upon faculty recommendation to the Dean of Graduate Studies in the third semester. The course work for the MA may be similar to that for the Master of Fine Arts, enhanced by related studies in theater and other departments. The candidate’s program of study will be designed by the primary dance faculty. As required by the School of Graduate Studies, students must maintain a minimum grade point average of 2.75. The Department of Dance requires an average of 3.0.

MA candidates must complete a minimum of 30 hours, following a program similar to that suggested below. The principal faculty advisor may suggest modifications.

Technique Classes: 12

- DANC 417 & DANC 418: Advanced Modern Dance Technique I and Advanced Modern Dance Technique II
- DANC 403: Fourth-Year Modern Dance Technique I
- DANC 460 & DANC 461: Ballet Technique for Modern Dance Students I and Ballet Technique for Modern Dance Students II

Choreography: 9

- DANC 414: The Craft of Choreography
- DANC 415: Choreography and Music
- DANC 416: Choreography and Theatrical Elements

Dance Science: 4-5

- DANC 445: Kinesiology for Dance
- DANC 446: Topics in Dance Medicine, Science, and Wellness

Additional core courses, one or more courses by advisement: 3-6

- DANC 535: Modern Dance Pedagogy
- DANC 455: History of Modern Dance
- DANC 505: Music Resources for Modern Dance
- or DANC 424: Production Resources
- Thesis or Research: 3
  - DANC 601: Special Projects
  - or DANC 644: Thesis
- Eurhythmics: 2

Total Units: 33-37

The program recommends The School of Graduate Studies’ plan B, with requirements including a non-performance, non-production thesis on a topic approved by the primary program faculty. The thesis must be a substantial contribution to the field, with potential for publication or presentation. The MA thesis must be completed no later than one academic year beyond the completion of the course requirements.

Master of Fine Arts (Contemporary Dance)

The Master of Fine Arts degree, available with emphasis areas in choreography, performance, pedagogy, and complementary courses in dance science, is a terminal pre-professional degree. Candidacy for the MFA program requires an undergraduate degree with (ideally) a major in dance, equivalent training and experience, or demonstrable potential for work at the MFA level. In addition, each candidate must provide evidence of technical skill and creative ability. Participation as a part-time student is not recommended.

At the end of each semester in residence, the student’s skill and creative ability are evaluated in light of his or her work in the department. Only students who have clearly demonstrated growth and excellence are permitted to remain in the program. The award of the MFA degree is contingent upon the student’s academic progress and upon the faculty’s assessment that the candidate possesses the potential to work in the field of dance on a professional level.

Requirements for the MFA degree include:

1. A minimum of 60 semester hours of graduate work beyond the bachelor’s degree
2. A cumulative grade point average of 3.0 for all course work on the graduate level
3. Completion of the course requirements for the MFA Thesis Portfolio
4. Successful completion of the third year in performance in the Mather Dance Center mainstage season

Specific requirements for the MFA degree are as follows:

<table>
<thead>
<tr>
<th>Course Requirement</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 hours of dance technique</td>
<td>18</td>
</tr>
<tr>
<td>12 hours of choreography</td>
<td>12</td>
</tr>
<tr>
<td>4 hours of Ensemble, DANC 485</td>
<td>4</td>
</tr>
<tr>
<td>MUDE 501 Special Reading (M.M. and M.A.)</td>
<td>1</td>
</tr>
<tr>
<td>MUDE 501 Special Reading (M.M. and M.A.) (MUDE 501 is to be taken twice for a total of 2 credit hours)</td>
<td>1</td>
</tr>
<tr>
<td>3 hours of contemporary dance history</td>
<td>3</td>
</tr>
<tr>
<td>3 hours each of Music Resources, DANC 505 and Production Resources, DANC 424</td>
<td>6</td>
</tr>
<tr>
<td>9-12 hours from Kinesiology, Pedagogy, Dance Wellness, research or elective</td>
<td>9-12</td>
</tr>
<tr>
<td>6 hours of creative thesis</td>
<td>6</td>
</tr>
<tr>
<td>Total Units</td>
<td>60-63</td>
</tr>
</tbody>
</table>

Department Faculty

Karen Potter, MFA  
(Case Western Reserve University)  
Professor and Chair  
Contemporary dance technique; choreography; pedagogy

Gary Galbraith, MFA  
(Case Western Reserve University)  
Professor; Artistic Director, Mather Dance Ensemble  
Contemporary dance technique; choreography; dance wellness; production and technology

Shannon Sterne, MA, MS  
(Case Western Reserve University)  
Assistant Professor  
Contemporary, Kinesiology, History
Courses

DANC 103. First-Year Modern Dance Techniques I. 3 Units.
Introduction to modern dance technique, through active participation, to serve individual development of basic movement principles, locomotor and axial skills and dance vocabulary, all in relation to time, space and dynamics and with a broad spectrum of applications, including dance, music, sports and theater. Explorations and investigations, both practical and cognitive, are designed to lay an introductory foundation for participating in and appreciating and understanding creative expressions.

DANC 104. First-Year Modern Dance Techniques II. 3 Units.
Continuation of DANC 103.

DANC 121. Dance in Culture - Ethnic Forms. 3 Units.
A lecture class designed to introduce dance as an art form and the many roles it plays in a variety of cultures. Focus will be on ethnic forms and primal cultures.

DANC 122. Dance in Culture - Theatrical Forms. 3 Units.
Introduction to an historical and cultural overview of many different theatrical forms of dance from various cultures specifically selected to encompass geographic diversity and represent different periods in history. Basic craft elements of the structures of theatrical dance will be introduced to provide a foundation for viewing dance and developing a personal aesthetic.

DANC 160. Introduction to Ballet Technique I. 3 Units.
This introductory-level course offers the beginning ballet student the basic tenets and principles of ballet technique. Classwork will involve strong emphasis on proper alignment of the body, dynamic timings, and a command of ballet terminology.

DANC 161. Introduction to Ballet Technique II. 3 Units.
Continuation of DANC 160. Prereq: DANC 160 or consent of department.

DANC 203. Second-Year Modern Dance Techniques I. 3 Units.
For the performing arts student, normative movement principles are formally extended in both theory and application to include individual correction, modification of adaptation as foundational preparation for the subsequent specialized training needs of the actor, dancer, and singer. Prereq: DANC 103 and DANC 104.

DANC 204. Second-Year Modern Dance Techniques II. 3 Units.
Continuation of DANC 203. Prereq: DANC 103 and DANC 104.

DANC 237. Religion and Dance in South Asia. 3 Units.
This is an experimental interdisciplinary course in religion, dance, and South Asian studies. We will explore the performance of religion in bharata natyam, one storytelling dance form from South Asia. This dance style draws upon Hindu devotional (bhakti) allegories of sacred and profane love in its choreography. Lover and beloved, as the ideal relationship between God and the human, becomes the model for the performed relationship between heroes and heroines (nayaka-nayaki) danced on stages and, more recently, Bollywood screens. To this end we will examine primary and secondary sources on bharata natyam and aesthetic theory/classical dramatics. We will also observe dance performances in the greater Cleveland area. Offered as RLGN 237 and DANC 237.

DANC 260. Second-Year Ballet Technique I. 3 Units.
In-depth exploration of principles and foundations of ballet technique as preparation for the specialized training needs of dancers.

DANC 261. Second-Year Ballet Technique II. 3 Units.
Continuation of DANC 260. Prereq: DANC 260 or consent of department.

DANC 303. Third-Year Modern Dance Techniques I. 3 Units.
For the dance major and upper level non-major. Formalities of dance technique as a contemporary American art form serve as the basis of the aesthetic and technical challenges explored in the course. Prereq: DANC 204.

DANC 304. Third-Year Modern Dance Techniques II. 3 Units.
Continuation of DANC 303. Recommended preparation: DANC 303 or consent of department.

DANC 314. The Craft of Choreography. 3 Units.
An in-depth investigation of choreographic craft elements is presented through lecture, practical involvement and specified studies. Emphasized are tools to discover primary movement vocabulary, development of vocabulary through permutative investigations and the co-ordering of movement vocabulary into phrases, structural units, and larger sections. Offered as DANC 314 and DANC 414.

DANC 315. Choreography and Music. 3 Units.
Combining craft resources with emphasis on use of music. Music selections, historically categorized, are chosen for the purpose of analyzing metric and structural characteristics in accord with which choreography will be created. Offered as DANC 315 and DANC 415. Prereq: DANC 314 or requisite not met permission.

DANC 317. Advanced Modern Dance Technique I. 1 - 3 Unit.
Emphasis on performing skills enlarged to include rehearsal and performance of full repertory works. Adaptability, versatility, and fidelity to choreographic intention stressed. Offered as DANC 317 and DANC 417. Prereq: DANC 304

DANC 318. Advanced Modern Dance Technique II. 1 - 3 Unit.
Continuation of DANC 317/417. Offered as DANC 318 and DANC 418. Prereq: DANC 317.

DANC 324. Dance Production Resources. 3 Units.
An examination of dance production resources such as costumes construction, lighting design, and management. Exercises include design, construction, and implementation to emphasize practical applications. Offered as DANC 324 and DANC 424.

DANC 335. Modern Dance Pedagogy. 3 Units.
The study and investigation of the approaches and methods of teaching modern dance. Detailed study is made of kinesthetic, oral, and creative factors in teaching dance. Opportunity to assist and teach under supervision. Offered as DANC 335 and DANC 535.

DANC 345. Kinesiology for Dance. 3 Units.
Seminar and laboratory for assessment of kinesiological and biomechanical principles as related to dance. Assessment of current research will be implemented to affect cross-training protocols. Offered as DANC 345 and DANC 445.

DANC 346. Topics in Dance Medicine, Science, and Wellness. 1 - 3 Unit.
Review and application of continually emerging information from the fields of Dance Medicine and Science that impacts general dancer health and the care and prevention and treatment of dance specific injuries. Participation in the Dancer Wellness Program is encouraged to facilitate continued application of principles developed in DANC 345. Offered as DANC 346 and DANC 446.

DANC 355. History of Modern Dance. 3 Units.
Origins and development of contemporary dance in its historical context. Counts as SAGES Departmental Seminar. Prereq: 100 level first year seminar in USFS, FSCC, FSSO, FSSY, or FSCS. Prereq or Coreq: FSTS 100.
DANC 360. Ballet Technique for Modern Dance Students I. 1 - 3 Unit.
Ballet Technique for Dancers will focus on developing the ballet skills required of the Modern Dance major. The technical level of the class will range from intermediate to advanced where applicable in barre work as well as center. Offered as DANC 360 and DANC 460.

DANC 361. Ballet Technique for Modern Dance Students II. 1 - 3 Unit.
Ballet Technique for Dancers will focus on developing the ballet skills required of the Modern Dance major. The technical level of the class will range from intermediate to advanced where applicable in barre work as well as center. Offered as DANC 361 and DANC 461. Prereq: DANC 360.

DANC 385. Production Practicum. 0 - 1 Units.
Practicum for students participating in production work in the Department of Dance. Supervised laboratory experience in technical theater, construction techniques, scenery, costumes, lighting, and props; production; ticket office operations, promotion, publicity and public relations; house management; wardrobe responsibilities; stage management; assistant directing; and other production positions.

DANC 386. Rehearsal and Performance. 0 Units.
Practicum for students participating in performance in the Department of Dance, relating to the mainstage productions at Mather Dance Center.

DANC 396. SAGES Senior Capstone in Dance. 3 Units.
This capstone course, the final requirement of the SAGES program, is limited to students majoring in Dance. As it is not required of the major, enrollment will be based on the recommendation of the student's major advisor. Projects may focus on creative or scholarly research, both of which require a written component that culminates in a formal presentation. Creative projects are only available to students who have successfully completed DANC 314 and 315, who have also consistently excelled in their upper-level modern technique classes and have been recommended by the faculty of the Department of Dance to undertake a creative project versus a scholarly project. Except in approved situations, all capstone projects are supervised by a faculty person in the Department of Dance. Counts as SAGES Senior Capstone. Prereq: DANC 203, DANC 204, DANC 303, DANC 304, DANC 355, DANC 414, DANC 423, or DANC 451.

DANC 397. Honors Studies I. 3 Units.
Individual projects in dance.

DANC 398. Honors Studies II. 3 Units.
Individual projects in dance.

DANC 399. Independent Study in Dance. 1 - 3 Unit.
Independent research and project work in areas of dance and pedagogy.

DANC 403. Fourth-Year Modern Dance Technique I. 1 - 3 Unit.
A logical progression of modern technique, this class is designed for the upper level dance major and graduate student in dance to further develop technical acumen with emphasis on aesthetic and physical challenges. Prereq: DANC 303.

DANC 404. Fourth-Year Modern Dance Technique II. 1 - 3 Unit.
Continuation of DANC 403. Prereq: DANC 403.

DANC 414. The Craft of Choreography. 3 Units.
An in-depth investigation of choreographic craft elements is presented through lecture, practical involvement and specified studies. Emphasized are tools to discover primary movement vocabulary, development of vocabulary through permutative investigations and the co-ordering of movement vocabulary into phrases, structural units, and larger sections. Offered as DANC 314 and DANC 414.

DANC 415. Choreography and Music. 3 Units.
Combining craft resources with emphasis on use of music. Music selections, historically categorized, are chosen for the purpose of analyzing metric and structural characteristics in accord with which choreography will be created. Offered as DANC 315 and DANC 415. Prereq: DANC 414.

DANC 416. Choreography and Theatrical Elements. 3 Units.
Use of properties, costumes, and scenic elements in both "first- and second-function" (Northrop) or "literal" and "abstract" applications challenge the functional and aesthetic appropriateness of conjoined choices. Dance structures fully developed under supervision. Successful results may be programmed for performance and tested for applicability to the Production sequence. Prereq: DANC 414.

DANC 417. Advanced Modern Dance Technique I. 1 - 3 Unit.
Emphasis on performing skills enlarged to include rehearsal and performance of full repertory works. Adaptability, versatility, and fidelity to choreographic intention stressed. Offered as DANC 317 and DANC 417. Prereq: DANC 404.

DANC 418. Advanced Modern Dance Technique II. 1 - 3 Unit.
Continuation of DANC 317/417. Offered as DANC 318 and DANC 418. Prereq: DANC 417.

DANC 424. Dance Production Resources. 3 Units.
An examination of dance production resources such as costumes construction, lighting design, and management. Exercises include design, construction, and implementation to emphasize practical applications. Offered as DANC 324 and DANC 424.

DANC 426. Advanced Topics in Choreography. 3 Units.
Introduction and investigation of advanced topics in choreography including but not limited to dance and technology, directing ensemble dance, and dance and the narrative. This course work is explored in the format of in-studio practicum and lecture, discussion, and peer and instructor review of student generated work. Structured studies will be developed under instructor supervision; students will be required to dedicate time and energy in the studio outside of class meetings to develop choreography studies for in-class presentation and review. Prereq: DANC 414 and DANC 415 and DANC 416.

DANC 445. Kinesiology for Dance. 3 Units.
Seminar and laboratory for assessment of kinesiological and biomechanical principles as related to dance. Assessment of current research will be implemented to affect cross-training protocols. Offered as DANC 345 and DANC 445.

DANC 446. Topics in Dance Medicine, Science, and Wellness. 1 - 3 Unit.
Review and application of continually emerging information from the fields of Dance Medicine and Science that impacts general dancer health and the care and prevention and treatment of dance specific injuries. Participation in the Dancer Wellness Program is encouraged to facilitate continued application of principles developed in DANC 345. Offered as DANC 346 and DANC 446.

DANC 447. Dancer Wellness Research. 1 - 6 Unit.
This course is designed to promote research interests for those students who have had an introduction to the field of Dancer Wellness through their other coursework and/or participation in the Dancer Wellness Program annual screening and summary profiles. Prereq: DANC 446.

DANC 455. History of Modern Dance. 3 Units.
Origin and development of modern dance in its historical context.
DANC 460. Ballet Technique for Modern Dance Students I. 1 - 3 Unit. Ballet Technique for Dancers will focus on developing the ballet skills required of the Modern Dance major. The technical level of the class will range from intermediate to advanced where applicable in barre work as well as center. Offered as DANC 360 and DANC 460.

DANC 461. Ballet Technique for Modern Dance Students II. 1 - 3 Unit. Ballet Technique for Dancers will focus on developing the ballet skills required of the Modern Dance major. The technical level of the class will range from intermediate to advanced where applicable in barre work as well as center. Offered as DANC 361 and DANC 461. Prereq: DANC 460.

DANC 485. Rehearsal, Performance and Production. 1 - 6 Unit. (See DANC 385.)

DANC 505. Music Resources for Modern Dance. 3 Units. Resources in the various periods and styles of music for the dancer/choreographer. Study of the choreographic use of music.

DANC 509. Introduction to Performance Theory. 1 - 3 Unit. This independent study oriented course is designed to acquaint the dance student with the major theoretical writings and practices of performance theory. Areas of exploration may include anthropological, mythological, psychological, and cultural sources of art, performance, and the creative impulse.

DANC 535. Modern Dance Pedagogy. 3 Units. The study and investigation of the approaches and methods of teaching modern dance. Detailed study is made of kinesthetic, oral, and creative factors in teaching dance. Opportunity to assist and teach under supervision. Offered as DANC 335 and DANC 535.

DANC 601. Special Projects. 1 - 3 Unit. (Credit as arranged.)

DANC 610. Professional Internship. 1 - 4 Unit. Involvement in intensive internships with professional dance companies, private studios, festivals, workshops or clinics to bridge the academic and professional lives. Internships may be scheduled for varying lengths of time.

DANC 640. M.F.A. Thesis Production I. 3 Units. Preproduction conception in area of specialization researched and documented under appointed advisement, in accord with production syllabus, and subcommittee approval.


DANC 644. M.A. Project. 1 - 12 Unit. Research and development of a Master of Arts project in Dance.

Department of Earth, Environmental, and Planetary Sciences

The earth, environmental and planetary sciences encompass a wide range of inquiries into the physical, chemical, and biological processes that shape the earth and the planets. Application of these inquiries to understanding a planet’s evolution through time is a unique attribute of geological investigations. Knowledge of the past and present reveals the constraints of our environment and serves as a guide for the future.

In recent years, significant advances have been made in the understanding of plate tectonics, properties of the earth’s interior, the nature of surface and near-surface processes, the history of the earth’s climate, the ecology of living and ancient organisms, and the comparative geology of other planets. Geologic knowledge is fundamental to resource conservation, land use planning, environmental geochemistry, hydrology, engineering construction works, and other environmental concerns.

Department faculty focus their research in three areas: surficial processes, planetary materials, and geochemistry. The department offers degree programs leading to the Bachelor of Arts (BA) and Bachelor of Science (BS) in geological sciences, BA in environmental geology, BA in environmental studies, Master of Science (MS), and Doctor of Philosophy (PhD). The Environmental Studies Program (p. 149) is described elsewhere in this bulletin.

Undergraduate Programs

Majors

Students in earth, environmental, and planetary sciences obtain a solid background in basic science and mathematics as well as intensive training in the major. In addition, because of the wide variety of ways in which geologic knowledge can be applied, all students are encouraged to take electives in subjects appropriate to their personal objectives, which may range from the engineering applications of geology to the socioeconomic and legal systems bearing on environmental issues. The undergraduate programs stress practical experience and fieldwork as well as classroom study. The environmental geology major combines courses in geological sciences with courses in basic and applied sciences to provide students with an understanding of environmental problems, with employable skills, and with a background for graduate study or professional school.

All students participate in a three-semester Senior Project sequence in which they propose a research project, conduct the research, write a thesis, and present it to the department.

Geological Sciences Major

Required courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>One of the following:</td>
<td>3</td>
</tr>
<tr>
<td>EEPS 100</td>
<td>Introduction to Geology in the Field</td>
</tr>
<tr>
<td>EEPS 110</td>
<td>Physical Geology</td>
</tr>
<tr>
<td>EEPS 115</td>
<td>Introduction to Oceanography</td>
</tr>
<tr>
<td>EEPS 119</td>
<td>Geology Laboratory</td>
</tr>
<tr>
<td>EEPS 210</td>
<td>Historical Geology/Paleontology</td>
</tr>
<tr>
<td>EEPS 301</td>
<td>Stratigraphy and Sedimentation</td>
</tr>
<tr>
<td>EEPS 315</td>
<td>Structural Geology and Geodynamics</td>
</tr>
<tr>
<td>EEPS 317</td>
<td>Introduction to Field Methods</td>
</tr>
<tr>
<td>EEPS 341</td>
<td>Mineralogy</td>
</tr>
<tr>
<td>EEPS 344</td>
<td>Igneous and Metamorphic Petrology</td>
</tr>
<tr>
<td>EEPS 360</td>
<td>Summer Field Camp</td>
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<tr>
<td>EEPS 390</td>
<td>Introduction to Geological Research</td>
</tr>
<tr>
<td>EEPS 391</td>
<td>Senior Project</td>
</tr>
<tr>
<td>EEPS 392</td>
<td>Professional Presentation</td>
</tr>
</tbody>
</table>

Nine hours of EEPS electives (at least two of these courses must be at the 200 level or higher)

Additional Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 105</td>
<td>Principles of Chemistry I</td>
</tr>
<tr>
<td>CHEM 106</td>
<td>Principles of Chemistry II</td>
</tr>
<tr>
<td>CHEM 113</td>
<td>Principles of Chemistry Laboratory</td>
</tr>
</tbody>
</table>
Environmental Geology Major

Required courses:

EEPS 110 Physical Geology 3
EEPS 119 Geology Laboratory 1
EEPS 210 Historical Geology/Paleontology 3
EEPS 220 Environmental Geology 3
EEPS 303 Environmental Law 3
or EEPS 202 Global Environmental Problems 3
EEPS 305 Geomorphology and Remote Sensing 3
EEPS 317 Introduction to Field Methods 3
EEPS 321 Hydrogeology 3
EEPS 390 Introduction to Geological Research 3
EEPS 391 Senior Project 2
EEPS 392 Professional Presentation 2

Nine hours of EEPS electives (three additional courses at the 200 level or higher which relate to the science or societal implications of environmental concerns. Must be approved by department advisor.) 9

Total Units 67

In the above majors, the student and his or her advisor will design the remainder of the curriculum based on individual interests, in accordance with departmental and college requirements. Through the Integrated Graduate Studies Program (http://bulletin.case.edu/undergraduates/gradprofessional/accelerationtowardgraduatedegreestext), students may earn a bachelor's and a master's degree in five years. Special programs, such as interdisciplinary majors, also may be arranged.

Minor

Students may complete a minor in geological sciences by taking at least 15 hours of coursework.

EEPS 119 Geology Laboratory 1
EEPS 101 The Earth and Planets 4
EEPS 110 Physical Geology 3
EEPS 115 Introduction to Oceanography 3
EEPS 117 Weather and Climate 3

Upper-level EEPS courses to bring total departmental credits to at least 15

Total Units 15

Graduate Programs

Graduate programs leading to the Master of Science and Doctor of Philosophy degrees are offered. Both programs are flexible so as to meet the needs of the individual student. General areas of study include aquatic systems, aquatic and groundwater chemistry, environmental geochemistry, benthic ecology, biostatigraphy and paleontology, environmental and urban geology, geomorphology, limnology, paleoclimatology, petrology, sedimentary geochemistry, sedimentation and stratigraphy, stable isotope studies, meteoritics, planetary materials, geodynamics of planetary interiors, and planetary geology. More specific information is available from the departmental office, the departmental Web page, and the Office of Admission of the School of Graduate Studies.

Facilities

The department’s research facilities include thin sectioning and mineral separation facilities; laboratories for chemical analysis of water, including an ion chromatograph, colorimetric spectrometer, atomic absorption spectrophotometer, electrochemistry equipment, and an environmental glove box; alpha and gamma spectroscopic facilities for analysis of environmental nuclides; equipment for studying animal-sediment relations, including a scanning gamma spectrometer; scanning electron microscope; electron microprobe; chemical reactors and a diamond anvil press for high-temperature and high-pressure geochemical experiments; and high-speed computing equipment.

Also housed in the department are laboratories for paleontological and micropaleontological investigations and for work in ecology and sedimentology. A well-field owned by the university is available for groundwater sampling and analysis.

The department also contains a wide range of other equipment, such as reflected and transmitted light microscopes, fluid inclusion microscope, cathodoluminescence microscope, submicron and clay-silt-sand particle size analyzers, high magnetic field mineral separator, X-ray diffractometer, and field equipment for groundwater and geophysical
work, including resistivity meter, seismic refraction instrument, ground conductivity meter, magnetometer, and gravimeter and field equipment for soil and sediment sampling.

**Department Faculty**

James A. Van Orman, PhD  
(Massachusetts Institute of Technology)  
*Professor and Chair*  
Geochemistry

Ralph P. Harvey, PhD  
(University of Pittsburgh)  
*Professor*  
Planetary geology

Steven A. Hauck, II, PhD  
(Washington University in St. Louis)  
*Professor*  
Geodynamics

Zhicheng Jing, PhD  
(Yale University)  
*Assistant Professor*  
Mineral physics

Gerald Matisoff, PhD  
(Johns Hopkins University)  
*Professor*  
Sedimentary and environmental geochemistry

Peter L. McCall, PhD, JD  
(Yale University)  
*Professor; Director, Environmental Studies Program*  
Benthic ecology; paleoecology

Beverly Z. Saylor, PhD  
(Massachusetts Institute of Technology)  
*Associate Professor*  
Sedimentary geology

Peter J. Whiting, PhD  
(University of California, Berkeley)  
*Professor and Associate Dean*  
Geomorphology; surface water hydrology; environmental geology

**Adjunct Faculty**

Mulugeta Alene Araya, PhD  
(University of Turin/University of Genoa)  
*Adjunct Associate Professor*  
Structural geology

Carlo DeMarchi, PhD  
(Georgia Institute of Technology)  
*Adjunct Assistant Professor*  
Water resources

Andrew Dombard, PhD  
(Washington University in St. Louis)  
*Adjunct Associate Professor; University of Illinois-Chicago*  
Planetary geophysics

Joseph Hannibal, PhD  
(Kent State University)  
*Adjunct Associate Professor; Cleveland Museum of Natural History*  
Invertebrate paleontology

Michael Ryan, PhD  
(University of Calgary)  
*Adjunct Associate Professor*  
Vertebrate paleontology

David Saja, PhD  
(University of Pennsylvania)  
*Adjunct Assistant Professor; Cleveland Museum of Natural History*  
Mineralogy

**Emeritus**

Samuel M. Savin, PhD  
(California Institute of Technology)  
*Jesse Earl Hyde Professor Emeritus of Geological Sciences and Dean Emeritus, College of Arts and Sciences*  
Isotope geochemistry

Francis Stehli, PhD  
(Columbia University)  
*Professor Emeritus*  
Stratigraphy

**Courses**

**EEPS 100. Introduction to Geology in the Field. 3 Units.**

This 3-week field course will serve as an introduction to geology by looking at the land around us: glacial features, sedimentary rocks, and the structures they form when continents collide. We will travel by van to six different states and visit some famous rock outcrops and glacial features, collect from some of the best fossil localities in the world, investigate some environmental geology problems (hazardous waste disposal and groundwater pollution, landslides, mining benefits and costs), and see how the Appalachian mountains were made. The course is constructed, operated, and graded assuming no prior geologic experience. Students will have multiple opportunities to observe, measure, and interpret at the outcrop level, and work together to piece together the history of a region. Discussion will proceed from what is observed to what is interpreted/inferred to its regional/larger significance. The course is carried out mostly in the field away from Cleveland; tent camping and hiking are required. Course fee in addition to summer tuition rates.

**EEPS 101. The Earth and Planets. 3 Units.**

An examination of the geological processes that have shaped the planets and moons of the inner solar system, focusing on those with relevance to our own planet Earth. Following an introduction to the fundamentals of planetary geology, lectures and exercises will explore how the other planets (the asteroids, Mercury, Venus, Earth, the Moon, and Mars) exhibit the effects of planetary differentiation, impact cratering, volcanic activity, tectonics, climate, and interactions with life.

**EEPS 110. Physical Geology. 3 Units.**

Introduction to geologic processes and materials that shape the world we live in. Hydrologic cycle and evolution of landscapes. Earthquakes, volcanoes, plate tectonics, and geologic resources. Students desiring laboratory experience should enroll in EEPS 119 concurrently.
EEPS 115. Introduction to Oceanography. 3 Units.
The sciences of oceanography. Physical, chemical, biologic, and geologic features and processes of the oceans. Differences and similarities between the oceans and large lakes including the Great Lakes. Required: Sunday field trip.

EEPS 117. Weather and Climate. 3 Units.
Introduction to the study of weather and climate. Covers the basics of meteorology, climate zones, the hydrologic cycle, and weather prediction. Lectures address timely topics including greenhouse warming, past global climates, and recent advances in meteorology.

EEPS 119. Geology Laboratory. 1 Unit.
Principles and techniques common to the geological sciences including rock and mineral identification, map interpretation, land form analysis, application of geological information to engineering works, and more. One three-hour laboratory or field trip weekly. Recommended preparation: EEPS 110.

EEPS 202. Global Environmental Problems. 3 Units.
Global Environmental Problems is a course designed to provide students with an understanding of, and an appreciation for, human-influenced environmental changes that are global in scope. Accordingly, much of the material will focus on the nature and structure of natural global systems, how and where in those systems human influences occur, and will delve deeply into a few particular problems and solutions of current interest, such as population growth, climate change, ozone depletion, and fisheries, from a variety of viewpoints. Offered as ESTD 202 and EEPS 202.

EEPS 210. Historical Geology/Paleontology. 3 Units.
History of life as recorded in sedimentary rocks. Case histories of important basins of deposition; the interrelationships of paleogeography, plate tectonics, and evolution. Two lectures and one laboratory weekly.

EEPS 220. Environmental Geology. 3 Units.

EEPS 225. Evolution. 3 Units.
Multidisciplinary study of the course and processes of organic evolution provides a broad understanding of the evolution of structural and functional diversity, the relationships among organisms and their environments, and the phylogenetic relationships among major groups of organisms. Topics include the genetic basis of micro- and macro-evolutionary change, the concept of adaptation, natural selection, population dynamics, theories of species formation, principles of phylogenetic inference, biogeography, evolutionary rates, evolutionary convergence, homology, Darwinian medicine, and conceptual and philosophic issues in evolutionary theory. Offered as ANTH 225, BIOL 225, EEPS 225, HSTY 225, and PHIL 225.

EEPS 301. Stratigraphy and Sedimentation. 3 Units.
Formation, distribution, and composition of sediments and sedimentary rocks. Modern depositional environments and their ancient analogues; principles of stratigraphic and biostratigraphic correlation. Two lectures and one laboratory per week. Offered as EEPS 301, EEPS 401

EEPS 303. Environmental Law. 3 Units.
Introduction to treatment of environmental issues in legal proceedings. Sources of environmental law, legal procedure, common law remedies (toxic torts and human health, nuisance, contract law), statutes and regulations, endangered species, public lands, toxics regulation, nuclear power, coal. The course employs the case method of reading and recitation of appellate judicial opinions. We read both classic cases in environmental law as well as current controversies. Offered as ESTD 303 and EEPS 303.

EEPS 305. Geomorphology and Remote Sensing. 3 Units.
Recognition and interpretation of land forms and their significance in revealing present and past geologic processes. Introduction to acquisition and analysis of data through aerial photography and satellite imagery. Two lectures and one laboratory weekly. Recommended preparation: EEPS 110 and EEPS 119. Offered as EEPS 305 and EEPS 405.

EEPS 307. Evolutionary Biology and Paleobiology of Invertebrates. 3 Units.
Important events in the evolution of invertebrate life; structure, function, and phylogeny of major invertebrate groups.

EEPS 315. Structural Geology and Geodynamics. 3 Units.
Theoretical analysis of deformation in earth materials, with illustrations of deformational styles in various tectonic settings and the dynamics of the Earth's interior. Recommended preparation: EEPS 110. Offered as EEPS 315 and EEPS 415.

EEPS 317. Introduction to Field Methods. 3 Units.
Practice in field procedures, recognition and testing of hypotheses in the field, field mapping and analysis of sedimentary, igneous, and metamorphic rocks in deformed and tectonically active settings. Weekly meeting plus spring break field trip. Students required to pay partial cost of meals, lodging, and travel. Offered as EEPS 317 and EEPS 417. Prereq: EEPS 119.

EEPS 318. Topics in Field Methods. 3 Units.
Field analysis of geological and environmental problems. Topics and locations will vary. Requires preparatory meetings and week-long field trip, usually during spring break. Students required to pay partial cost of meals, lodging, and travel. Recommended preparation: EEPS 119 or permission of instructor.

EEPS 321. Hydrogeology. 3 Units.
Basic and applied concepts pertaining to the occurrence and movement of groundwater. Definitions, basic equations, applications to a variety of geologic settings, wells. Requires one Saturday field trip to make field measurements, collect and analyze data, and prepare a report. Offered as EEPS 321 and EEPS 421.

EEPS 330. Geophysical Field Methods and Laboratory. 4 Units.
Use of seismic refraction and reflection, gravity, electrical, magnetic, and electromagnetic methods to infer the earth's structure and composition. Application of inverse theory to estimate model parameters. Requires students to make field measurements, analyze data, and prepare a report. Includes several required Saturday field trips. Offered as EEPS 330 and EEPS 430.

EEPS 336. Aquatic Chemistry. 4 Units.
Chemical equilibria occurring in natural waters. Quantitative methods of describing acid-base, metal ion/ligand, precipitation/dissolution, and oxidation/reduction reactions. Geochemical cycling of trace metals and nutrients. Offered as EEPS 336 and EEPS 436.
EEPS 340. Earth and Planetary Interiors. 3 Units.
Quantitative introduction to the composition, structure, dynamics, and evolution of Earth and other planets using principles of geophysics and geochemistry. Planetary formation and differentiation, composition and structure of Earth and planets, heat generation and heat flow, mantle convection and plate tectonics, planetary magnetism and core dynamics, chemical evolution of Earth and planets, extrasolar planets and super Earths. This course will be offered to both undergraduate students and graduates. In addition to the requirements for undergraduate students, graduate students will be asked to work on a small course project relevant to the subject of the course and submit a term paper based on this project by the end of semester. Offered as EEPS 340 and EEPS 440. Prereq: MATH 122 or MATH 126.

EEPS 341. Mineralogy. 4 Units.
Crystallography, hand specimen mineralogy and petrology, principles of crystal structure and crystal chemistry, elementary thermodynamics and phase diagrams, and an introduction to the petrographic microscope. Three lectures and one three-hour laboratory weekly. Recommended preparation: EEPS 119.

EEPS 344. Igneous and Metamorphic Petrology. 4 Units.
Composition, classification, and genesis of igneous and metamorphic rocks, emphasizing physical and chemical principles governing their origin. Laboratory study of rocks in thin section. Two lectures and two three-hour laboratories weekly. Prereq: EEPS 341.

EEPS 345. Planetary Materials. 1 - 3 Unit.
An introduction to the materials that make up the solid matter of the solar system. Student presentations will review our current understanding of accessible primitive materials such as meteorites, cosmic dust, lunar and ancient terrestrial rocks, and their relationship to modern natural materials and solar system processes. Offered as EEPS 345 and EEPS 445.

EEPS 349. Geological Problems. 1 - 3 Unit.
Special work arranged according to the qualifications of the student.

EEPS 350. Geochemistry. 3 Units.
Introduction to geochemistry. Properties of the elements, elemental and isotopic fractionation, element transport, geochemical systems, geochronology, mineral reactions, the solid Earth, Earth in the solar system. A quantitative approach to modeling geochemical processes will be emphasized throughout. Offered as EEPS 350 and EEPS 450.

EEPS 360. Summer Field Camp. 6 Units.
Six-week course in geologic field methods and mapping. Not offered at CWRU; must be taken at another college or university. Credits will be transferred.

EEPS 367. Topics in Evolutionary Biology. 3 Units.
The focus for this course on a special topic of interest in evolutionary biology will vary from one offering to the next. Examples of possible topics include theories of speciation, the evolution of language, the evolution of sex, evolution and biodiversity, molecular evolution. ANAT/ANTH/EEPS/PHIL/PHOL 467/Biol 468 will require a longer, more sophisticated term paper, and additional class presentation. Offered as ANTH 367, BIOL 368, EEPS 367, PHIL 367, ANAT 467, ANTH 467, BIOL 468, EEPS 467, PHIL 467 and PHOL 467. Prereq: EEPS 225 or equivalent.

EEPS 390. Introduction to Geological Research. 3 Units.
Examination of factors in the selection, design, and conduct of research projects and in the analysis and interpretation of research results. Consideration of ethical issues in scientific research. Development of a written research proposal and oral presentation of proposed research. Consultations with department faculty in development of research proposal. Research initiation. Offered as EEPS 390 and EEPS 490. Counts as SAGES Departmental Seminar.

EEPS 391. Senior Project. 2 Units.
Research project required of all department majors, based on formal project proposals presented to department faculty. Proposals may be submitted prior to the semester in which EEPS 391 is taken. Grading based on project progress presentation that will include a statement of the problem, a literature review, a description of their field/lab work and presentation of their data collected to date. This course is the first of a 2 semester Senior Capstone (EEPS 391, 392) sequence. Recommended preparation: EEPS 390. Counts as SAGES Senior Capstone.

EEPS 392. Professional Presentation. 2 Units.
Preparation and presentation of final written and oral reports on individual Senior Projects. Class meetings focus on group discussion of problem areas in analysis and interpretation of project results, and in styles of writing poster and oral presentation as demonstrated by practice examples. This course is the second in a two-course (EEPS 391, 392) Senior Capstone sequence. Counts as SAGES Senior Capstone. Prereq: EEPS 390 and EEPS 391. Coreq: EEPS 390.

EEPS 394. Seminar in Evolutionary Biology. 3 Units.
This seminar investigates 20th-century evolutionary theory, especially the Modern Evolutionary synthesis and subsequent expansions of and challenges to that synthesis. The course encompasses the multidisciplinary nature of the science of evolution, demonstrating how disciplinary background influences practitioners’ conceptualizations of pattern and process. This course emphasizes practical writing and research skills, including formulation of testable theses, grant proposal techniques, and the implementation of original research using the facilities on campus and at the Cleveland Museum of Natural History. Offered as ANTH 394, BIOL 394, EEPS 394, HSTY 394, PHIL 394, ANTH 494, BIOL 494, EEPS 494, HSTY 494, and PHIL 494.

EEPS 396. Undergraduate Research in Evolutionary Biology. 3 Units.
Students propose and conduct guided research on an aspect of evolutionary biology. The research will be sponsored and supervised by a member of the CASE faculty or other qualified professional. A written report must be submitted to the Evolutionary Biology Steering Committee before credit is granted. Offered as ANTH 396, BIOL 396, EEPS 396, and PHIL 396.

EEPS 401. Stratigraphy and Sedimentation. 3 Units.
Formation, distribution, and composition of sediments and sedimentary rocks. Modern depositional environments and their ancient analogues; principles of stratigraphic and biostratigraphic correlation. Two lectures and one laboratory per week. Offered as EEPS 301, EEPS 401

EEPS 405. Geomorphology and Remote Sensing. 3 Units.
Recognition and interpretation of land forms and their significance in revealing present and past geologic processes. Introduction to acquisition and analysis of data through aerial photography and satellite imagery. Two lectures and one laboratory weekly. Recommended preparation: EEPS 110 and EEPS 119. Offered as EEPS 305 and EEPS 405.
EEPS 415. Structural Geology and Geodynamics. 3 Units.
Theoretical analysis of deformation in earth materials, with illustrations of
def ormational styles in various tectonic settings and the dynamics of the
Earth's interior. Recommended preparation: EEPS 110. Offered as EEPS
315 and EEPS 415.

EEPS 417. Introduction to Field Methods. 3 Units.
Practice in field procedures, recognition and testing of hypotheses
in the field, field mapping and analysis of sedimentary, igneous, and
metamorphic rocks in deformed and tectonically active settings. Weekly
meeting plus spring break field trip. Students required to pay partial cost
of meals, lodging, and travel. Offered as EEPS 317 and EEPS 417.

EEPS 421. Hydrogeology. 3 Units.
Basic and applied concepts pertaining to the occurrence and movement
of groundwater. Definitions, basic equations, applications to a variety of
g eologic settings, wells. Requires one Saturday field trip to make field
measurements, collect and analyze data, and prepare a report. Offered
as EEPS 321 and EEPS 421.

EEPS 425. Geotectonics. 3 Units.
Interpretation of the major crustal features of the earth in terms of plate
tectonics and associated phenomena.

EEPS 430. Geophysical Field Methods and Laboratory. 4 Units.
Use of seismic refraction and reflection, gravity, electrical, magnetic, and
electromagnetic methods to infer the earth's structure and composition.
Application of inverse theory to estimate model parameters. Requires
students to make field measurements, analyze data, and prepare a
report. Includes several required Saturday field trips. Offered as EEPS
330 and EEPS 430.

EEPS 436. Aquatic Chemistry. 4 Units.
Chemical equilibria occurring in natural waters. Quantitative methods
 of describing acid-base, metal ion/ligand, precipitation/dissolution, and
oxidation/reduction reactions. Geochemical cycling of trace metals and
 nutrients. Offered as EEPS 336 and EEPS 436.

EEPS 437. Chemistry of Natural Waters. 3 Units.
Advanced topics in aquatic chemistry. Thermodynamics models for ion/
ligand speciation in natural waters; origin and composition of seawater,
chemical and mineralogical sequence during evaporation, chemical
weathering, groundwater and river water chemistry, chemical cycling
and a global mass balances; perturbations on natural systems by man.
Predictive capabilities of box models.

EEPS 440. Earth and Planetary Interiors. 3 Units.
Quantitative introduction to the composition, structure, dynamics, and
evolution of Earth and other planets using principles of geophysics and
geochemistry. Planetary formation and differentiation, composition and
structure of Earth and planets, heat generation and heat flow, mantle
convection and plate tectonics, planetary magnetism and core dynamics,
chemical evolution of Earth and planets, extrasolar planets and super
Earths. This course will be offered to both undergraduate students and
graduates. In addition to the requirements for undergraduate students,
graduate students will be asked to work on a small course project
relevant to the subject of the course and submit a term paper based on
this project by the end of semester. Offered as EEPS 340 and EEPS 440.
 Prereq: MATH 122 or MATH 126.

EEPS 444. Flow and Sediment Transport. 3 Units.
This course focuses on open channel flow and sediment transport
mechanics. A mathematical framework for the description of free surface
flow and various modes of particle transport is built. This framework is
used in discussions of geomorphic and sedimentologic processes and
features. Specific topics covered include dimensional analysis, forces on
settling particles, fluid flow, initiation of particle movement, bedload and
suspended load transport and their calculation, and channel form.

EEPS 445. Planetary Materials. 1 - 3 Unit.
An introduction to the materials that make up the solid matter of the solar
system. Student presentations will review our current understanding of
accessible primitive materials such as meteorites, cosmic dust, lunar and
ancient terrestrial rocks, and their relationship to modern natural materials
and solar system processes. Offered as EEPS 345 and EEPS 445.

EEPS 450. Geochemistry. 3 Units.
Introduction to geochemistry. Properties of the elements, elemental
and isotopic fractionation, and transport, geochemical systems,
geochronology, mineral reactions, the solid Earth, Earth in the solar
system. A quantitative approach to modeling geochemical processes will
be emphasized throughout. Offered as EEPS 350 and EEPS 450.

EEPS 455. Isotope Geochemistry. 3 Units.
Principles and applications of naturally occurring variations of isotopic
abundances in geologic, hydrologic, and biologic systems. Includes
consideration of radioactive and radiogenic isotopes and their use in
g eochronology and as tracers; consideration of isotopic fractionations
(especially of light stable isotopes), their thermodynamic and kinetic
causes, and their use in understanding mechanisms and conditions of
g eologic processes and as tracers.

EEPS 467. Topics in Evolutionary Biology. 3 Units.
The focus for this course on a special topic of interest in evolutionary
biology will vary from one offering to the next. Examples of possible
topics include theories of speciation, the evolution of language, the
evolution of sex, evolution and biodiversity, molecular evolution. ANAT/
ANTH/EEPS/PHIL/PHOL 467/BIOL 468 will require a longer, more
sophisticated term paper, and additional class presentation. Offered as
ANTH 367, BIOL 368, EEPS 367, PHIL 367, ANAT 467, ANTH 467, BIOL
468, EEPS 467, PHIL 467 and PHOL 467.

EEPS 490. Introduction to Geological Research. 3 Units.
Examination of factors in the selection, design, and conduct of research
 projects and in the analysis and interpretation of research results.
Consideration of ethical issues in scientific research. Development of a
written research proposal and oral presentation of proposed research.
Consultations with department faculty in development of research
proposal. Research initiation. Offered as EEPS 390 and EEPS 490.
Counts as SAGES Departmental Seminar.

EEPS 494. Seminar in Evolutionary Biology. 3 Units.
This seminar investigates 20th-century evolutionary theory, especially
the Modern Evolutionary synthesis and subsequent expansions
of and challenges to that synthesis. The course encompasses the
multidisciplinary nature of the science of evolution, demonstrating how
disciplinary background influences practitioners' conceptualizations
of pattern and process. This course emphasizes practical writing and
research skills, including formulation of testable theses, grant proposal
techniques, and the implementation of original research using the
facilities on campus and at the Cleveland Museum of Natural History.
Offered as ANTH 394, BIOL 394, EEPS 394, HSTY 394, PHIL 394,
ANTH 494, BIOL 494, EEPS 494, HSTY 494, and PHIL 494.

EEPS 503. Seminar: Geomorphology/Glacial Geology. 1 Unit.
A major in English prepares one for various sorts of careers. Three paths
cooperation with the faculty in planning a course of study.

Likewise, the curriculum is deliberately flexible or tutorials, and other opportunities for students and faculty to work
closely together. Likewise, the curriculum is deliberately flexible
with a scale and set of values more typical of a liberal arts college, the
Combining the intellectual resources of a major research university
with a scale and set of values more typical of a liberal arts college, the
department puts great stress on class discussion, individual conferences
and tutorials, and other opportunities for students and faculty to work
closely together. Likewise, the curriculum is deliberately flexible

The Department of English offers courses of study leading to the
Bachelor of Arts, Master of Arts, and Doctor of Philosophy degrees. Included among the department’s offerings are literary and cultural
studies, linguistics, film, journalism and new media, creative writing,
visual rhetoric, rhetoric, and professional writing.

Combining the intellectual resources of a major research university
with a scale and set of values more typical of a liberal arts college, the
department puts great stress on class discussion, individual conferences
or tutorials, and other opportunities for students and faculty to work
closely together. Likewise, the curriculum is deliberately flexible

A major in English prepares one for various sorts of careers. Three paths
are common:

- English leads readily to careers that put a premium on writing skills and
  on the ability to analyze complex human situations. In addition to the fields that have often been of first interest to English majors
  (writing and publishing, journalism, advertising, the film industry,
  public relations, and teaching), significant opportunities exist in the
  corporate world, in government, and in nonprofit organizations such
  as those devoted to social service, the environment, or the arts.

The major in English includes two tracks. The primary track consists of

The BA in English is usually essential to anyone expecting to do
graduate work in English or to pursue a career as a teacher or a
scholar in the field.

- The BA in English traditionally has been an important steppingstone
to success in professional school, and many of our English majors
choose this path. A significant number go on to law school, many to
medical or business school, and some to nursing, journalism, social
work, or library school, as well as directly into the business world.

Facilities

In addition to manuscript and rare-book holdings in the Special
Collections Division, Kelvin Smith Library has strengths in Renaissance
literature; 18th-, 19th-, and 20th-century English literature; and American
literature. The library also houses an outstanding collection of several
thousand films and other audiovisual materials, supported in part by
English department endowment funds. In Strosacker Auditorium, the
Film Society maintains facilities capable of projecting 35 mm and 16 mm
films. In the library’s Freedman Center, students have access to video
cameras, state-of-the-art digital editing software, and stations where they
can view audiovisual materials from the library collection.

Teacher Licensure in Integrated Language Arts (p. 138) | Integrated
Graduate Studies (p. 138) | Minors (p. 138)

Undergraduate Programs

Major

The major in English includes two tracks. The primary track consists of

ENGL 300 English Literature to 1800 3
ENGL 302 English Literature since 1800 3
or ENGL 308 American Literature
ENGL 380 Departmental Seminar 3

A capstone course: choose 1 of the following cross-listed
courses (designated with a C) to fulfill the English major capstone
requirement as well as the SAGES capstone requirement:

ENGL 303C Intermediate Fiction Capstone 3
ENGL 304C Poetry Writing Capstone 3
ENGL 328C Studies in 18th Century Capstone 3
ENGL 331C Studies in the Nineteenth Century Capstone 3
ENGL 345C Topics in LGBT Studies Capstone 3
ENGL 368C Topics in Film Capstone 3
ENGL 372C Studies in the Novel Capstone 3

You’ll also need to take one of the following: 3

ENGL 310 History of the English Language
ENGL 312 Chaucer
ENGL 320 Renaissance Literature
ENGL 323 Milton
ENGL 324 Shakespeare: Histories and Tragedies
ENGL 325 Shakespeare: Comedies and Romances
ENGL 327 Eighteenth-Century Literature
ENGL 328 Studies in the Eighteenth Century
ENGL 329 English Literature, 1780-1837
Fifteen additional hours of English courses, at least 3 of which must be at the 300 level.

Because of the flexibility of departmental requirements and the variety of career paths to which the major may lead, all students should confer frequently and closely with advisors. No courses outside the department are required for the major (although a language course is necessary for the Honors track – see below), but the department recommends courses in comparative literature, history, philosophy, history and criticism of the fine arts, theater, and literature in other languages. Students planning to go to graduate school are reminded of the importance of foreign language study.

Completion of the University composition requirement (ENGL 150 Expository Writing or SAGES First Seminar) is a prerequisite for most English courses at the 200 level and above.

**Departmental Honors**

To qualify for honors, English majors follow a track consisting of at least 36 hours above the 100 level, including the general requirements for the major (see above); ENGL 387 Literary and Critical Theory, or approved substitute; at least 18 hours of approved electives in literary and cultural studies; and one of the following language courses, or an equivalent in a language for which 300-level literature courses are available:

- **FRCH 202** Intermediate French II 4
- **GREK 202** Introduction to Greek Poetry 3
- **GRMN 202** Intermediate German II 4
- **JAPN 202** Intermediate Japanese II 4
- **LATN 202** Vergil 3
- **SPAN 202** Intermediate Spanish II 4

The award of honors requires a minimum GPA of 3.5 in courses taken for the honors program.

**Teacher Licensure in Integrated Language Arts**

The English department offers a special option for undergraduate students who wish to pursue an English major and a career in teaching. The Adolescent to Young Adult (AYA) Teacher Education Program in Integrated Language Arts prepares CWRU students to receive an Ohio Teaching License for grades 7-12. Students declare a second major in Education – which involves 34 hours in Education and practicum requirements – and complete a planned sequence of English content coursework within the context of an English major. The program is designed to offer several unique features not found in other programs and to place students in mentored teaching situations throughout their teacher preparation career. This small, rigorous program is designed to capitalize on the strengths of CWRU's English department, its Teacher Education Program, and the relationships the University has built with area schools.

The subject area requirements for teacher licensure (42 credit hours) are as follows:

- **ENGL 150** Expository Writing 3
- **ENGL 200** Literature in English 3
- **ENGL 202** Advanced Expository Writing 3
- **ENGL 204** Introduction to Journalism 3

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<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENGL 302</td>
<td>English Literature since 1800</td>
<td>3</td>
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<tr>
<td>ENGL 308</td>
<td>American Literature</td>
<td>3</td>
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<tr>
<td>ENGL 324</td>
<td>Shakespeare: Histories and Tragedies</td>
<td>3</td>
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<tr>
<td>or ENGL 325</td>
<td>Shakespeare: Comedies and Romances</td>
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<tr>
<td>ENGL 368</td>
<td>Topics in Film</td>
<td>3</td>
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<tr>
<td>ENGL 380</td>
<td>Departmental Seminar</td>
<td>3</td>
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<tr>
<td>One of the following:</td>
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<tr>
<td>ENGL 301</td>
<td>Linguistic Analysis</td>
<td>3</td>
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<tr>
<td>or ENGL 379</td>
<td>Topics in Language Studies</td>
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<tr>
<td>or COSI 313</td>
<td>Language Development</td>
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<td>Two of the following:</td>
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<tr>
<td>ENGL 257B</td>
<td>Poetry</td>
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<tr>
<td>ENGL 270</td>
<td>Introduction to Gender Studies</td>
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<td>ENGL 363H</td>
<td>African-American Literature</td>
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<td>ENGL 365E</td>
<td>The Immigrant Experience</td>
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<td>ENGL 365N</td>
<td>Topics in African-American Literature</td>
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<td>ENGL 365Q</td>
<td>Post-Colonial Literature</td>
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<tr>
<td>Recommended electives:</td>
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<tr>
<td>ENGL 203</td>
<td>Introduction to Creative Writing</td>
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<tr>
<td>ENGL 213</td>
<td>Introduction to Fiction Writing</td>
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<tr>
<td>ENGL 214</td>
<td>Introduction to Poetry Writing</td>
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<tr>
<td>ENGL 303</td>
<td>Intermediate Writing Workshop: Fiction</td>
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<tr>
<td>ENGL 304</td>
<td>Intermediate Writing Workshop: Poetry</td>
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<tr>
<td>ENGL 310</td>
<td>History of the English Language</td>
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<tr>
<td>ENGL 392</td>
<td>Classroom Teaching</td>
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</table>

**Integrated Graduate Studies**

The Department of English participates in the Integrated Graduate Studies Program (http://bulletin.case.edu/undergraduatestudies/integratgradprofessional/accelerationtowardgraduatedegreestext), which makes it possible to complete both a BA and an MA in English in about five years of full-time study. The department particularly recommends the program to qualified students who are interested in seeking admission to highly competitive professional schools or PhD programs. Interested students should note the general requirements and the admission procedures elsewhere in this bulletin.

**Minors**

**Minor in English**

The minor in English consists of at least 15 hours above the 100 level. Students who wish to minor in English arrange their sequence of courses in consultation with the department advisor. Minors are strongly advised to take ENGL 200 Literature in English early in the sequence. They should also keep in mind that the flexibility of the department's requirements often makes it possible to take English as a second major.

**Minor in Film Studies**

Like the minor in English, the minor in Film Studies requires 15 hours:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENGL 367</td>
<td>Introduction to Film (It is recommended that students take this course first or as early in the sequence as possible.)</td>
<td>3</td>
</tr>
<tr>
<td>The remaining 12 credits can consist of any combination of the following:</td>
<td></td>
<td>3-12</td>
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<tr>
<td>ENGL 368</td>
<td>Topics in Film (up to 12 credits)</td>
<td>3-12</td>
</tr>
</tbody>
</table>
ENGL 368C  Topics in Film Capstone (up to 3 credits)  3
ENGL 316  Screenwriting (up to 3 credits)
An approved elective course (up to 6 credits)  0-6

Minor in Creative Writing

The minor in creative writing requires 15 credit hours. Students will take courses in 2 genres—poetry and fiction—and will be required to have an intro/intermediate sequence in one of those genres (e.g., ENGL 213 Introduction to Fiction Writing and ENGL 303 Intermediate Writing Workshop: Fiction).

Requirements:

15 credit hours, which includes the following:

• 9 credit hours in creative writing courses (at least 6 hours in one genre)
• 6 credit hours in literature classes

In addition, students submit a creative writing portfolio.

For the literature requirement, students should take two 300-level classes; at least one of these classes should match their dominant genre.

These courses may be in other disciplines if cross-listed with English (e.g., World Lit). Up to six credits may count toward either the English major or another minor (but not both).

Concentration in Film

The film concentration requires that 9 of the 30 credits for the English major be approved film courses.

These 9 credits must include:

ENGL 367  Introduction to Film  3
(students are advised to take as early in the film sequence as possible.)

The remaining 6 credits can consist of any combination of the following (up to 3 credits each):

ENGL 368  Topics in Film  3
ENGL 368C  Topics in Film Capstone  3
ENGL 316  Screenwriting  3
ENGL 309  Immersion Journalism/Multimedia Storytelling  3

Or an approved elective course*

* Many courses taught across the University can qualify as elective courses, and new ones are coming along all the time. Past courses that would qualify include Latin American Cinema, Black Religion and Film, The Hollywood Musical, Topics in German Cinema, Film Music, Jewish Image in Popular Culture, French Cinema, James Bond in Popular Culture, Classics in Film, and Folklore & Myth in Japanese Film.

Candidates for graduate work in English should present an undergraduate major in English or a minimum of 18 semester hours of English (or its equivalent) beyond the freshman level. In some cases, students will be required to make up deficiencies without graduate credit. The department requires all candidates for admission to submit their scores on the aptitude sections of the Graduate Record Examination. Candidates are also required to submit a writing sample, consisting of at least 15 pages of academic writing.

A maximum of six semester hours of transfer credit will be accepted from another institution, provided they were earned in graduate-level courses, with the approval of the department and the dean of graduate studies. Such courses must have been taken within five years of matriculation at Case Western Reserve University and passed with grades of B or better. The department accommodates part-time students in certain circumstances.

Teaching is viewed as an essential part of the education of graduate students aspiring to academic posts, and is required of all students working under assistantships. The department provides opportunities for graduate assistants to gain teaching experience in a variety of courses and in the Writing Resource Center.

New and continuing graduate students are normally supported with graduate assistantships providing tuition remission and a living stipend. Assistantships are awarded by the dean on recommendation of the department. Applicants to the PhD program with previous teaching experience are preferred. All graduate assistants are required to take university- and department-level training courses in their first semester of work at the University.

Chair

Christopher Flint, PhD
(University of Pennsylvania)
Associate Professor and Chair
18th-century English literature; print culture

Department Faculty

Michael Clune, PhD
(Johns Hopkins University)
Professor
American literature; literature and science; poetry

Kimberly Emmons, PhD
(University of Washington)
Associate Professor; Director of Composition
Rhetoric; composition; gender and language; medical humanities

T. Kenneth Fountain, PhD
(University of Minnesota)
Associate Professor
Scientific and technical communication; visual culture; rhetorical theory

Sarah Gridley, MFA
(University of Montana)
Associate Professor
Creative writing (poetry); feminist and eco-poetics

Graduate Programs

The Department of English offers programs in American and English literature and language leading to the Master of Arts and Doctor of Philosophy degrees. At either the MA or PhD level, students may elect a project concentration in Writing History and Theory. The department also collaborates with the Department of Modern Languages and Literatures in offering a Master of Arts in world literature.
Mary Grimm, MA  
(Cleveland State University)  
Associate Professor  
Creative writing (fiction); contemporary literature; graphic novels

Megan Swihart Jewell, PhD  
(Duquesne University)  
Instructor; Director, Writing Resource Center  
American literature; writing studies; poetics

Hee-Seung Kang, PhD  
(University of Washington)  
Instructor; Director of ESL Writing  
Second-language learning; academic literacies

Kurt Koenigsberger, PhD  
(Vanderbilt University)  
Associate Professor; Director of Graduate Studies  
19th- and 20th-century British literature; postcolonial literature

William H. Marling, PhD  
(University of California, Santa Barbara)  
Professor  
American and world literature; modernism; popular culture

Marilyn Sanders Mobley, PhD  
(Case Western Reserve University)  
Professor  
Toni Morrison; Black women writers; African American literature; cultural studies

Erika Mae Olbricht, PhD  
(University of New Hampshire)  
Instructor; SAGES Instructional Coordinator  
16th- and 17th-century British literature; drama

John M. Orlock, MFA  
(Pennsylvania State University)  
Samuel B. and Virginia C. Knight Professor of Humanities  
Playwriting; screenwriting

James Sheeler, MA  
(University of Colorado)  
Shirley Wormser Professor of Journalism and Media Writing; Director of Undergraduate Studies  
Journalism

William R. Siebenschu, PhD  
(University of California, Berkeley)  
Oviatt Professor of English  
18th- and 19th-century British literature; biography and autobiography

Robert Spadoni, PhD  
(University of Chicago)  
Associate Professor  
Film studies

Thrity Umrigar, PhD  
(Kent State University)  
Armington Professor  
Creative writing (fiction and memoir); journalism; African American literature

Maggie Vinter, PhD  
(Johns Hopkins University)  
Assistant Professor  
16th- and 17th-century British literature; drama

Athena Vrettos, PhD  
(University of Pennsylvania)  
Associate Professor  
19th-century British literature; literature and medicine; literature and psychology; women’s and gender studies

Martha Woodmansee, PhD  
(Stanford University)  
Professor  
Literary theory; 18th- and 19th-century comparative literature; copyright

Adjunct Faculty

Michael Householder, PhD  
(University of California, Irvine)  
Adjunct Instructor  
Early American literature; literary theory; bioethics

Courses

**ENGL 146. Tools, Not Rules: English Grammar for Writers. 3 Units.**  
This course provides an Introduction to English grammar in context for academic writers. It focuses on the study of language in use, including parts of speech, sentence grammar, paragraph structure, and text cohesion. This course is specifically designed for multilingual students, but native speakers of English may take the course with the approval of the instructor.

**ENGL 148. Introduction to Composition. 3 Units.**  
Practice and training in various modes and genres of writing. Undergraduate CIM students placed into ENGL 148 must complete the course with a grade of C or higher in order to enroll in ENGL 150.

**ENGL 150. Expository Writing. 3 Units.**  
Substantial training and practice in academic writing.

**ENGL 155. Introduction to Rhetoric and Public Speaking. 3 Units.**  
This course will focus on the theories of rhetoric, the work of developing and preparing a speech and on the art and skill of delivering various kinds of oral presentations. The assignments will: a) Introduce students to the traditions, theories and core principles of public speaking, from Aristotle's Rhetoric to Cicero to Kenneth Burke. b) Engage them in the five-part "canon of rhetoric" for developing speeches. c) Give them opportunities to develop and deliver several different types of classic speeches, both as a speaker and as a speechwriter.

**ENGL 180. Writing Tutorial. 1 Unit.**  
Substantial scheduled tutorial work in writing.

**ENGL 181. Academic Skills Tutorial. 1 Unit.**  
Substantial tutorial work on academic skills such as: reading and vocabulary development, academic interactions and resources, critical thinking, time management, and/or study strategies. Students may work individually with instructor or in small groups. The course may be repeated, but only one semester-hour will count towards the degree.

**ENGL 183. Academic Writing Studio. 1 Unit.**  
Practice and training in various aspects of academic writing in a small group workshop environment. Please note: only one semester hour of English 183 will count toward a degree, but the course may be repeated.
ENGL 184. Research Writing Studio. 1 Unit.
Practice and training in various aspects of research in a small-group workshop environment. Offered concurrently with University Seminar; provides supplementary instruction to help students meet University Seminar writing objectives. Please note: only two semester hours of ENGL 184 will count towards a degree.

ENGL 186. Writing Workshop for Researchers. 2 Units.
Individualized writing workshop/tutorial for graduate students, faculty, and staff. Includes small group workshops and individualized instruction in genres and forms of academic and research writing.

ENGL 200. Literature in English. 3 Units.
This course introduces students to the reading of literature in the English language. Through close attention to the practice of reading, students are invited to consider some of the characteristic forms and functions imaginative literature has taken, together with some of the changes that have taken place in what and how readers read. Recommended preparation: Concurrent enrollment in ENGL 150 or USFS 100.

ENGL 202. Advanced Expository Writing. 3 Units.
A workshop-style course for students that offers practice and training in genres of nonfiction prose. Special attention paid to style and presentation. Prereq: 100 level first seminar in FSCC, FSNA, FSSO, or FSSY.

ENGL 203. Introduction to Creative Writing. 3 Units.
A course exploring basic issues and techniques of writing narrative prose and verse through exercises, analysis, and experiment. For students who wish to try their abilities across a spectrum of genres.

ENGL 204. Introduction to Journalism. 3 Units.
Students will learn the basics of reporting and writing news stories, but also the traditions behind the craft and the evolving role of journalism in society. Instruction will include interviewing skills, fact-checking, word choice and story structure—all framed by guidance on making ethically sound decisions. Assignments could include stories from a variety of beats (business, entertainment, government, science), along with deadline stories and breaking news Web updates, profiles and obituaries.

ENGL 213. Introduction to Fiction Writing. 3 Units.
A beginning workshop in fiction writing, introducing such concepts as voice, point of view, plot, characterization, dialogue, description, and the like. May include discussion of literary examples, both classic and contemporary, along with student work.

ENGL 214. Introduction to Poetry Writing. 3 Units.
A beginning workshop, focusing on such elements of poetry as verse-form, syntax, figures, sound, tone. May include discussion of literary examples as well as student work.

ENGL 217A. Business and Professional Writing. 3 Units.
An introduction to professional communication in theory and practice. Special attention paid to audience analysis, persuasive techniques in written and oral communication, document design strategies, and ethical communication practices. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

ENGL 217B. Writing for the Health Professions. 3 Units.
This course offers practice and training in the professional and technical writing skills common to health professions (e.g., medicine, nursing, dentistry). Attention will be paid to the writing processes of drafting, revising, and editing. Typical assignments include: letters, resumes, personal essays, professional communication genres (e.g., email, reports, patient charts, and histories), and scholarly genres (e.g., abstracts, articles, and reviews). Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

ENGL 257A. The Novel. 3 Units.
Introductory readings in the novel. May be organized chronologically or thematically. Some attention to the novel as a historically situated genre.

ENGL 257B. Poetry. 3 Units.
Introductory readings in poetry. May be organized chronologically or thematically. Attention to the formal qualities of poetry in relation to meaning, expressivity, etc.

ENGL 270. Introduction to Gender Studies. 3 Units.
This course introduces women and men students to the methods and concepts of gender studies, women's studies, and feminist theory. An interdisciplinary course, it covers approaches used in literary criticism, history, philosophy, political science, sociology, anthropology, psychology, film studies, cultural studies, art history, and religion. It is the required introductory course for students taking the women's and gender studies major. Offered as ENGL 270, HSTY 270, PHIL 270, RLGN 270, SOCI 201, and WGST 201. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

ENGL 285. Special Topics Seminar. 3 Units.
Seminars on special topics in literature or language. Maximum of 3 credits.

ENGL 290. Masterpieces of Continental Fiction. 3 Units.
Major works of fiction from the 19th century and earlier. Offered as ENGL 290 and WLIT 290.

ENGL 291. Masterpieces of Modern Fiction. 3 Units.
Major works of fiction of the 20th century. Offered as ENGL 291 and WLIT 291.

ENGL 300. English Literature to 1800. 3 Units.
A survey of major British authors from Chaucer to Milton and Dryden. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

ENGL 301. Linguistic Analysis. 3 Units.
Analysis of modern English from various theoretical perspectives: structural, generative, discourse analytical, sociolinguistic, psycholinguistic, and cognitive linguistic. Some attention to the major dialects of American English. Offered as ENGL 301 and ENGL 401. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

ENGL 302. English Literature since 1800. 3 Units.
A survey of major British authors from Wordsworth to the present. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

ENGL 303. Intermediate Writing Workshop: Fiction. 3 Units.
Continues developing the concepts and practice of the introductory courses, with reading, writing, and discussion of fiction in various forms, including the short story, the novella and the novel. Maximum 6 credits. Prereq: ENGL 203 or ENGL 213.
ENGL 303C. Intermediate Fiction Capstone. 3 Units.
This Capstone course continues developing the concepts and practice of the introductory courses, with reading, writing, and discussion of fiction in various forms, including the short story, the novella and the novel. Offered as ENGL 303 and ENGL 303C. Students taking this course for their SAGES Capstone will not be repeating material they covered in ENGL 303. Students registering for ENGL 303C will be required to develop and complete a Capstone project, which will include a minimum of two short stories (or an alternative writing project developed in conjunction with the instructor) and a critical introduction to the project. Capstone students will also make a public presentation of their work. Counts as SAGES Senior Capstone. Prereq: (ENGL 203 or 213), ENGL 303 and ENGL 380.

ENGL 304. Intermediate Writing Workshop: Poetry. 3 Units.
Continues developing the concepts and practice of the introductory courses, with emphasis on experiment and revision as well as consideration of poetic genres through examples from established poets. Maximum 6 credits. Prereq: ENGL 203 or ENGL 214.

ENGL 304C. Poetry Writing Capstone. 3 Units.
This Capstone course continues developing the concepts and practice of the introductory courses, with emphasis on experiment and revision as well as consideration of poetic genres through examples from established poets. Offered as ENGL 304 and ENGL 304C. There will be a midterm presentation and a Capstone poetry project. Students taking this course for their SAGES Capstone will not be repeating material they covered in ENGL 304. They will be required to complete 25 pages of creative writing and 15 pages of critical writing and attend some separate meetings to discuss their progress on the Capstone project. Capstone students will also be required to present reports on their research projects at a public Capstone presentation at the end of the semester. Counts as SAGES Senior Capstone. Prereq: (ENGL 214 or 203), ENGL 304 and ENGL 380.

ENGL 305. Playwriting. 3 Units.
Theory and practice of dramatic writing, in the context of examples, classic and contemporary. Recommended preparation: ENGL 203 or ENGL 213 or ENGL 214 or ENGL 303 or ENGL 304. Offered as ENGL 305 and THTR 312.

ENGL 306. Intermediate Writing Workshop: Creative Non-Fiction. 3 Units.
A writing workshop that focuses on non-fiction. Students will study and write narrative journalism, the memoir, and the personal essay. Maximum 6 credits. Prereq: ENGL 203 or ENGL 213 or ENGL 214.

ENGL 307. Feature/Magazine Writing. 3 Units.
Continues developing the concepts and practices of the introductory course, with emphasis on feature writing for magazines (print and online), story structure, fact-checking, reporting techniques and freelancing. A student may not receive credit for both ENGL 307 and ENGL 307C. Prereq: ENGL 204 or instructor approval.

ENGL 307C. Feature/Magazine Writing Capstone. 3 Units.
This Capstone course continues developing the concepts and practices of the introductory course, with emphasis on feature writing for magazines (print and online), story structure, fact-checking, reporting techniques and freelancing. Students registering for 307C will be required to develop and complete a Capstone project in the wider field of study covered by the course and to make a public presentation of this project. The Capstone version of the class (307C) will expand the requirements to include a student-conceived magazine-length feature story independently overseen by the instructor, along with a reflective essay, pitch letter to a magazine, and oral presentation. A student may not receive credit for both ENGL 307 and ENGL 307C. Prereq: ENGL 204 and ENGL 380 or requisites not met permission.

ENGL 308. American Literature. 3 Units.
A survey of major American authors from the Puritans to the present. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

ENGL 309. Immersion Journalism/Multimedia Storytelling. 3 Units.
Students will spend the bulk of the semester documenting lives and stories from a local nursing home through audio slideshows and video projects. A student may not receive credit for both ENGL 309 and ENGL 309C. Prereq: ENGL 204 or instructor approval.

ENGL 309C. Multimedia Storytelling Capstone. 3 Units.
This Capstone course will require that students spend the bulk of the semester documenting lives and stories from a local nursing home through audio slideshows and video projects. Students who register for 309C to fulfill their SAGES Capstone requirement will individually plan, shoot and edit a 7-10 minute documentary, compose a 15 page reflective essay, and complete an oral presentation. A student may not receive credit for both ENGL 309 and ENGL 309C. Prereq: ENGL 204 and ENGL 380 or requisites not met permission.

ENGL 310. History of the English Language. 3 Units.
An introductory course covering the major periods of English language development: Old, Middle, and Modern. Students will examine both the linguistic forms and the cultures in which the forms were used. Offered as ENGL 310 and ENGL 410. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

ENGL 312. Chaucer. 3 Units.
An introduction to the work of Geoffrey Chaucer, with emphasis on “The Canterbury Tales.” A student may not receive credit for both ENGL 312 and ENGL 312C. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

ENGL 312C. Chaucer Capstone. 3 Units.
This capstone course is an introduction to the work of Geoffrey Chaucer, with emphasis on “The Canterbury Tales.” Students registering for 312C will be required to develop and complete a Capstone project in the wider field of study covered by the course and to make a public presentation of this project. A student may not receive credit for both ENGL 312 and ENGL 312C. Prereq: ENGL 380 and (ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS).

ENGL 314. Advanced Playwriting. 3 Units.
Theory and practice of dramatic writing with special focus on the craft of writing a full-length play. Offered as ENGL 314 and THTR 314. Prereq: ENGL 305 or THTR 312.
ENGL 316. Screenwriting. 3 Units.
A critical exploration of the craft of writing for film, in which reading and practicum assignments will culminate in the student submitting an original full-length screenplay. Offered as ENGL 316 and THTR 316. Prereq: ENGL 305.

ENGL 320. Renaissance Literature. 3 Units.
Aspects of English Renaissance literature and its contexts from 1500-ca. 1620. Genres studied might include poetry, drama, prose fiction, expository and polemic writing, or some works from Continental Europe. Writers such as Skelton, More, Erasmus, Wyatt, Sidney, Spenser, Marlowe, Lanier, Wroth, Shakespeare, Donne. Maximum 6 credits. Offered as ENGL 320 and ENGL 420. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

ENGL 324. Shakespeare: Histories and Tragedies. 3 Units.
Close reading of a selection of Shakespeare's tragedies and history plays (e.g., "Richard the Third," *Julius Caesar," "Hamlet," "King Lear"). Topics of discussion may include Renaissance drama as a social institution, the nature of tragedy, national history, gender roles, sexual politics, the state and its opponents, theatrical conventions. Assessment may include opportunities for performance. Offered as ENGL 324, ENGL 424, and THTR 334. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

ENGL 325. Shakespeare: Comedies and Romances. 3 Units.
Close reading of selected plays of Shakespeare in the genres of comedy and romance (e.g., "The Merchant of Venice," "Twelfth Night," "Measure for Measure," "The Tempest"). Topics of discussion may include issues of sexual desire, gender roles, marriage, the family, genre conventions. Assessment may include opportunities for performance. A student may not receive credit for both ENGL 325 and ENGL 325C. Offered as ENGL 325, ENGL 425, and THTR 335. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

ENGL 325C. Shakespeare: Comedies/Romances Capstone. 3 Units.
Close reading of selected plays of Shakespeare in the genres of comedy and romance (e.g., "The Merchant of Venice," "Twelfth Night," "Measure for Measure," "The Tempest"). Topics of discussion may include issues of sexual desire, gender roles, marriage, the family, genre conventions. Assessment may include opportunities for performance. Students registering for 325C will be required to develop and complete a Capstone project in the wider field of study covered by the course and to make a public presentation of this project. A student may not receive credit for both ENGL 325 and ENGL 325C. Prereq: ENGL 380 and (ENGL 310 or ENGL 312 or ENGL 320 or ENGL 323 or ENGL 324 or ENGL 327 or ENGL 328 or ENGL 329).

ENGL 327. Eighteenth-Century Literature. 3 Units.
Survey of a variety of writings from or relevant to the eighteenth century. Writers discussed may include Dryden, Behn, Defoe, Pope, Swift, Gay, Fielding, Richardson, Burney, Wolfstonecra, and others working in drama, lyric and epic poetry, biography and autobiography, political and philosophical writings and prose fiction. Thematic approaches may include: satire, journalism and literature, the rise of the novel. Maximum 6 credits. Offered as ENGL 327 and ENGL 427. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

ENGL 328. Studies in the Eighteenth Century. 3 Units.
This course examines selected topics in the English literary culture of the eighteenth century, a culture which extended to the Americas and to other English colonies. Literary writings will be examined in relation to other aspects of the century's culture, which may include visual arts, marital institutions, the printing industry, property law, medicine, and other topics. Maximum 6 credits. Offered as ENGL 328 and ENGL 428. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSTS, or FSCS.

ENGL 328C. Studies in 18th Century Capstone. 3 Units.
This Capstone course examines selected topics in the English literary culture of the eighteenth century, a culture which extended to the Americas and to other English colonies. Literary writings will be examined in relation to other aspects of the century's culture, which may include visual arts, marital institutions, the printing industry, property law, medicine, and other topics. Students registering for 328C will be required to develop and complete a Capstone project in the wider field of study covered by the course and to make a public presentation of this project. A student who has previously taken ENGL 328 may receive credit for ENGL 328C only if the themes/topics are different. Counts as SAGES Senior Capstone. Prereq: ENGL 380 and (ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSTS, or FSCS).

ENGL 329. English Literature, 1780-1837. 3 Units.
Aspects of English literature and its contexts in the early 19th century. Genres might include poetry, prose fiction, and philosophical writing, literary theory of the period. Writers such as Wordsworth, Coleridge, Blake, Austin, Byron, the Shelleys. Maximum 6 credits. Offered as ENGL 329 and ENGL 429. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSTS, or FSCS.

ENGL 330. Victorian Literature. 3 Units.
Aspects of English literature and its contexts during the reign of Queen Victoria. Genres studied might include poetry, prose fiction, political and philosophical writing. Writers such as the Brontes, Gaskell, Dickens, Eliot, Hardy, Tennyson, the Brownings, Arnold, Carlyle, Ruskin, Gosse, Swinburne, and Hopkins. Maximum 6 credits. Offered as ENGL 330 and ENGL 430. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.
ENGL 330C. Victorian Literature Capstone. 3 Units.
This Capstone course studies aspects of English literature and its contexts during the reign of Queen Victoria. Genres studied might include poetry, prose fiction, political and philosophical writing. Writers such as the Brontes, Gaskell, Dickens, Eliot, Hardy, Tennyson, the Brownings, Arnold, Carlyle, Ruskin, Gosse, Swinburne, and Hopkins. Students registering for 330C will be required to develop and complete a Capstone project in the wider field of study covered by the course and to make a public presentation of this project. A student who has previously taken ENGL 330 may receive credit for ENGL 330C only if the themes/topics are different. Prereq: ENGL 380 and (ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS).

ENGL 331. Studies in the Nineteenth-Century. 3 Units.
Individual topics in English literary culture of the 19th century. Topics might be thematic or formal, such as literature and science; medicine; labor; sexuality; Empire; literature and other arts; Gothic fiction; decadence. Maximum 6 credits. Offered as ENGL 331 and ENGL 431. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

ENGL 331C. Studies in the Nineteenth Century Capstone. 3 Units.
This Capstone course studies individual topics in English literary culture of the 19th century. Topics might be thematic or formal, such as literature and science; medicine; labor; sexuality; Empire; literature and other arts; Gothic fiction; decadence. Students registering for 331C will be required to develop and complete a Capstone project in the wider field of study covered by the course and to make a public presentation of this project. A student who has previously taken ENGL 331 may receive credit for ENGL 331C only if the themes/topics are different. Counts as SAGES Senior Capstone. Prereq: ENGL 380 and (ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS).

ENGL 332. Twentieth-Century British Literature. 3 Units.
Aspects of British literature (broadly interpreted) and its contexts during the 20th century. Genres studied might include poetry, fiction, and drama. Such writers as Joyce, Woolf, Conrad, Ford, Lawrence, Mansfield, Shaw, Beckett, Stoppard, Yeats, Edward or Dylan Thomas, Stevie Smith, Bowen, Spark. Maximum 6 credits. Offered as ENGL 332 and ENGL 432. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

ENGL 333. Studies in the Twentieth and Twenty-first Centuries. 3 Units.
Individual topics in twentieth- and twenty-first century literary culture. Particular issues and topics may cross national boundaries and genre lines as well as exploring political, psychological, and social themes, such as movements, comparative studies across the arts, literature and war, literature and occultism. Maximum 6 credits. Offered as ENGL 333 and ENGL 433. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

ENGL 341. Rhetoric of Science and Medicine. 3 Units.
This course explores the roles language and rhetoric play in constructing, communicating, and understanding science and medicine. It surveys current and historical debates, theories, research, and textual conventions of scientific and medical discourse. May be taught with a specific focus, such as scientific controversies, concepts of health and illness, visualizations of science, the body in medicine, and the history of scientific writing. Offered as: ENGL 341 and ENGL 441. Prereq: ENGL 150 or letter grade in SAGES First Seminar.

ENGL 343. Language and Gender. 3 Units.
This course introduces students to the study of language and gender by exploring historical and theoretical trends, methods, and research findings on the ways gender, sexuality, language, and discourse interact with and even shape each other. Topics may include "grammatical" versus "biological" gender, feminine ecriture, the women and language debate, speech acts and queer performativity, nonsexist language policy, discourses of gender and sexuality, feminist stylistics, and LGBT sociolinguistics. Offered as: ENGL 343, ENGL 443, and WGST 343. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

ENGL 345. Topics in LGBT Studies. 3 Units.
This course will focus on selected topics in the study of LGBT literature, film, theory, and culture. Individual courses may focus on such topics as queer theory, LGBT literature, queer cinema, gay and lesbian poetry, LGBT graphic novels, the AIDS memoir, AIDS/Gay Drama, and queer rhetoric and protest. Maximum 6 credits. Offered as ENGL 345, ENGL 445 and WGST 345. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

ENGL 345C. Topics in LGBT Studies Capstone. 3 Units.
This Capstone course will focus on selected topics in the study of LGBT literature, film, theory, and culture. Individual courses may focus on such topics as queer theory, LGBT literature, queer cinema, gay and lesbian poetry, LGBT graphic novels, the AIDS memoir, queer new media, AIDS activism, and AIDS/Gay Drama. Students registering for 345C will be required to develop and complete a Capstone project in the wider field of study covered by the course and to make a public presentation of this project. Counts for CAS Global & Cultural Diversity Requirement. A student who has previously taken ENGL 345 may receive credit for ENGL 345C only if the themes/topics are different. Counts as SAGES Senior Capstone. Prereq: ENGL 380 and (ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS).

ENGL 353. Major Writers. 3 Units.
Close and detailed study of the work of one or two writers: development, social and aesthetic contexts, reception, interpretation, significance. Maximum 6 credits. Offered as ENGL 353 and ENGL 453. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

ENGL 356. American Literature Before 1865. 3 Units.
Aspects of American literature and its contexts from the colonial period through the end of the Civil War. Writers such as Bradstreet, Taylor, Franklin, Poe, Stowe, Alcott, Melville, Hawthorne, Emerson, Douglass. Maximum 6 credits. Offered as ENGL 356 and ENGL 456. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

ENGL 358. American Literature 1914-1960. 3 Units.
Aspects of American literature and its contexts from the First World War to the Cold War. Genres studied might include fiction, poetry, drama, polemics. Writers such as T.S. Eliot, Pound, Stevens, Moore, W.C. Williams, Dos Passos, West, Fitzgerald, Hemingway, Cather, Faulkner, Barnes, Miller, T. Williams, O'Neill. Maximum 6 credits. Offered as ENGL 358 and ENGL 458. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.
ENGL 358C. American Literature, 1914-1960 Capstone. 3 Units.
This Capstone course presents aspects of American literature and its contexts from the first World War to the Cold War. Genres studied might include fiction, poetry, drama, polemics. Writers such as T.S. Eliot, Pound, Stevens, Moore, W.C. Williams, Dos Passos, West, Fitzgerald, Hemingway, Cather, Faulkner, Barnes, Miller, T. Williams, O'Neill. Students registering for 358C will be required to develop and complete a Capstone project in the wider field of study covered by the course and to make a public presentation of this project. A student who has previously taken ENGL 358 may receive credit for ENGL 358C only if the themes/topics are different. Prereq: ENGL 380 and (ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS).

ENGL 359. Studies in Contemporary American Literature. 3 Units.
Individual topics in literary culture since the 1960s. Topics may include the Beats, literature of the Vietnam war, post-modern fiction, contemporary poetry, the documentary novel. Maximum 6 credits. Offered as ENGL 359 and ENGL 459. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

ENGL 360. Studies in American Literature. 3 Units.
Individual topics in American literary culture such as regionalism, realism, impressionism, literature and popular culture, transcendentalism, the lyric, proletarian literature, the legacy of the Civil War. Maximum 6 credits. Offered as ENGL 360 and ENGL 460. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

ENGL 363H. African-American Literature. 3 Units.
A historical approach to African-American literature. Such writers as Wheatley, Equiano, Douglass, Jacobs, DuBois, Hurston, Hughes, Wright, Baldwin, Ellison, Morrison. Topics covered may include slave narratives, African-American autobiography, the Harlem Renaissance, the Black Aesthetic, literature of protest and assimilation. Maximum 6 credits. Offered as ENGL 363H, ETHS 363H, WLIT 463H, and WLIT 463H. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

ENGL 365E. The Immigrant Experience. 3 Units.
Study of fictional and/or autobiographical narrative by authors whose families have experienced immigration to the U.S. Among the ethnic groups represented are Asian-American, Jewish-American, Hispanic-American. May include several ethnic groups or focus on a single one. Attention is paid to historical and social aspects of immigration and ethnicity. Maximum 6 credits. Offered as ENGL 365E, WLIT 365E, ENGL 465E, and WLIT 465E. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

ENGL 365N. Topics in African-American Literature. 3 Units.
Selected topics and writers from nineteenth, twentieth, and twenty-first century African-American literature. May focus on a genre, a single author or a group of authors, a theme or themes. Maximum 6 credits. Offered as ENGL 365N, ETHS 365N, WLIT 365N, ENGL 465N, and WLIT 465N. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

ENGL 365Q. Post-Colonial Literature. 3 Units.
Readings in national and regional literatures from former European colonies such as Australia and African countries. Maximum 6 credits. Offered as ENGL 365Q, ETHS 365Q, WLIT 365Q, ENGL 465Q, and WLIT 465Q. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

ENGL 366G. Minority Literatures. 3 Units.
A course dealing with literature produced by ethnic and racial minority groups within the U.S. Individual offerings may include works from several groups studied comparatively, or focus on a single group, such as Native Americans, Chicanos/Chicanas, Asian-Americans, Caribbean-Americans. African-American works may also be included. May cover the entire history of the U.S. or shorter periods. Maximum 6 credits. Offered as ENGL 366G, WLIT 366G, ENGL 466G, and WLIT 466G. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

ENGL 367. Introduction to Film. 3 Units.
An introduction to the aesthetics of film form. We will analyze the elements that make up a film, screening films that facilitate our discussion of how these elements interact with one another to constitute whole formal systems that generate meanings and other effects. We will bring various theoretical and historical considerations to bear as we explore and appreciate the art of cinema. Offered as ENGL 367 and ENGL 467.

ENGL 368. Topics in Film. 3 Units.
Individual topics in film, such as a particular national cinema, horror films, films of Alfred Hitchcock, images of women in film, film comedy, introduction to film genres, Asian-cinema and drama, dance on screen, science fiction films, storytelling and cinema, and literature and film. Maximum 15 credits. A student who has previously taken ENGL 368C may receive credit for ENGL 368 only if the themes/topics are different. Offered as ENGL 368, ENGL 468, WLIT 368, and WLIT 468.

ENGL 368C. Topics in Film Capstone. 3 Units.
Individual topics in film, such as a particular national cinema, horror films, films of Alfred Hitchcock, images of women in film, film comedy, film genres, Asian-cinema and drama, dance on screen, science fiction films, storytelling and cinema, and literature and film. Students registering for ENGL 368C will be required to develop and complete a Capstone project in the wider field of study covered by the course and to make a public presentation of this project. Students must be a declared English Major with Concentration in Film or both English Major and Film Minor. Permission of instructor must be received prior to the last day of classes the previous semester. A student who has previously taken ENGL 368C may receive credit for ENGL 368C only if the themes/topics are different. Counts as SAGES Senior Capstone. Prereq: ENGL 380 and (ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS).

ENGL 369. Children's Literature. 3 Units.
Individual topics in 19th-, 20th-, and 21st-century children's literature. Topics may focus on narrative and thematic developments in the genre, historical contexts, literary influences, or adaptations of children's literature into film and other media. Offered as ENGL 369 and ENGL 469. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

ENGL 370. Topics in Women's and Gender Studies. 3 Units.
Individual topics and issues in women's studies relating to writing by and about women, such as feminist theory and criticism; the politics of gender and sexuality; women in popular culture; women in the writing business. Maximum 6 credits. Offered as ENGL 370 and ENGL 470. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.
ENGL 372. Studies in the Novel. 3 Units.
Selected topics in the history and formal development of the novel, such as detective novels; science fiction; epistolary novels; the rise of the novel; the stream of consciousness novel; the Bildungsroman in English. Maximum 6 credits. Offered as ENGL 372 and ENGL 472. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

ENGL 372C. Studies in the Novel Capstone. 3 Units.
This Capstone course studies selected topics in the history and formal development of the novel, such as detective novels; science fiction; epistolary novels; the rise of the novel; the stream of consciousness novel; the Bildungsroman in English. Students registering for 372C will be required to develop and complete a Capstone project in the wider field of study covered by the course and to make a public presentation of this project. A student who has previously taken ENGL 372 may receive credit for ENGL 372C only if the themes/topics are different. Counts as SAGES Senior Capstone. Prereq: ENGL 380 and (ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS).

ENGL 373. Studies in Poetry. 3 Units.
Selected topics and issues in the study of poetry, such as reading poetry, the elegy, pastoral poetry, love poetry, the long poem, form and meter in poetry. Maximum 6 credits. Offered as ENGL 373 and ENGL 473. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

ENGL 374. Internship in Journalism. 3 - 6 Units.
Students work as interns at area newspapers, magazines, trade publications, radio or television and meet as a class to share their experiences as interns and to focus on editorial issues--reporting, writing, fact-checking, editing--that are a part of any journalistic enterprise. Students are responsible for pre-arranging their internship prior to the semester they intend to take the class but can expect guidance from the instructor in this regard. Recommended preparation: ENGL 204 or permission of the department.

ENGL 376. Studies in Genre. 3 Units.
Topics in literary genres, such as comedy, biography and autobiography, satire, allegory, the short story, the apologue, narrative poetry. Maximum 6 credits. Offered as ENGL 376 and ENGL 476. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

ENGL 377. Studies in Drama. 3 Units.
Readings and discussion of plays and related critical literature pertaining to a specific period in American or British drama. Topics and material will vary from semester to semester. Offered as ENGL 377 and ENGL 477. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

ENGL 378. Topics in Visual and New Media Studies. 3 Units.
This course will focus on selected topics in the study of visual rhetoric and/or new media, including theoretical, critical, and historical issues raised by texts and media platforms that communicate largely through visual means or through the interaction of visual and verbal modes. Possible syllabi may focus on topics such as visual rhetoric; new media story-telling; historical perspectives on visual rhetoric and/or new media; concentrations on a particular genre (for instance, the graphic novel, video games, etc.); visual narrative; theories of new media; etc. Offered as ENGL 378 and ENGL 478. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

ENGL 379. Topics in Language Studies. 3 Units.
Aspects of contemporary language studies. Topics might include history/theories of rhetoric, discourse studies, cognitive linguistics, metaphor, language acquisition, stylistics. Maximum 9 credits. Offered as ENGL 379 and ENGL 479. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

ENGL 380. Departmental Seminar. 3 Units.
A topical course, emphasizing disciplinary forms of writing. Required of all English majors, preferable in the junior year; also fulfills a SAGES requirement. Counts as SAGES Departmental Seminar. Prereq: ENGL 300.

ENGL 385. Special Topics in Literature. 3 Units.
Close study of a theme or aspect of literature not covered by traditional generic or period rubrics, such as "spatial imagination," "semiotics of fashion in literature," "epistolarity." Maximum 9 credits. Offered as ENGL 385 and ENGL 485. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

ENGL 386. Studies in Literature and Culture. 3 Units.
Boundary-crossing study of the relations between literary and other aspects of a particular culture or society, including theoretical and critical issues raised by such study. For example, literature and medicine, law and literature, gay and lesbian literature, Asian/Western literary relations, emotion in literature, philosophy and literature, literature and music. Maximum 9 credits. Offered as ENGL 386 and ENGL 486. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

ENGL 387. Literary and Critical Theory. 3 Units.
A survey of major schools and texts of literary and critical theory. May be historically or thematically organized. Maximum 6 credits. Offered as ENGL 387, WLIT 387, ENGL 487, and WLIT 487. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

ENGL 390. Independent Study and Creative Projects. 1 - 3 Unit.
Up to three semester hours of independent study may be taken in a single semester. Must have prior approval of faculty member directing the project. Projects may be critical or creative in nature.

ENGL 392. Classroom Teaching. 3 Units.
For undergraduate students who assist in the teaching of ENGL 150, 180, or 181. Interested students should check with the director of composition (for ENGL 150, 180, 181) before the beginning of the semester in which they wish to participate. May be repeated only once; not more than three semester hours in ENGL 392 may be counted toward the major. May also include up to three semester hours of supervised peer tutoring at the University Writing Center.

ENGL 395. Capstone Seminar. 3 Units.
Capstone course, to be taken in the senior year. Open to non-English majors. Required for all English majors in senior year. Features individual projects in a workshop environment; students have the option of a research-based or a creative writing project. Counts as SAGES Senior Capstone. Prereq: ENGL 300 and ENGL 302 or ENGL 308 and ENGL 380.

ENGL 398. Professional Communication for Engineers. 2 Units.
A writing course for Engineering students only, covering academic and professional genres of written and oral communication. Taken in conjunction with Engineering 398, English 398 constitutes an approved SAGES Departmental Seminar. Counts as SAGES Departmental Seminar. Coreq: ENGR 398. Prereq: 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.
ENGL 400. Rhetoric and Teaching of Writing. 3 Units.
Classical and modern theories of rhetoric; their application in the classroom. Required of graduate assistants and tutors who have had no prior experience in the teaching of composition. Prereq: Graduate standing.

ENGL 401. Linguistic Analysis. 3 Units.
Analysis of modern English from various theoretical perspectives: structural, generative, discourse analytical, sociolinguistic, psycholinguistic, and cognitive linguistic. Some attention to the major dialects of American English. Offered as ENGL 301 and ENGL 401. Prereq: Graduate standing.

ENGL 406. Advanced Creative Writing. 3 Units.
Workshop for serious undergraduate and graduate writers. Offered alternate years; alternates between poetry and fiction. Admission requires review of writing sample by faculty. Maximum 6 credits. Prereq: Graduate standing.

ENGL 410. History of the English Language. 3 Units.
An introductory course covering the major periods of English language development: Old, Middle, and Modern. Students will examine both the linguistic forms and the cultures in which the forms were used. Offered as ENGL 310 and ENGL 410. Prereq: Graduate standing.

ENGL 420. Renaissance Literature. 3 Units.
Aspects of English Renaissance literature and its contexts from 1500-ca. 1620. Genres studied might include poetry, drama, prose fiction, expository and polemic writing, or some works from Continental Europe. Writers such as Skelton, More, Erasmus, Wyatt, Sidney, Spenser, Marlowe, Lanier, Wroth, Shakespeare, Donne. Maximum 6 credits. Offered as ENGL 320 and ENGL 420. Prereq: Graduate standing.

ENGL 423. Milton. 3 Units.
Poetry and selected prose, including the careful study of "Paradise Lost." Offered as ENGL 323 and ENGL 423. Prereq: Graduate standing.

ENGL 424. Shakespeare: Histories and Tragedies. 3 Units.
Close reading of a selection of Shakespeare's tragedies and history plays (e.g., "Richard the Third," "Julius Caesar," "Hamlet," "King Lear"). Topics of discussion may include Renaissance drama as a social institution, the nature of tragedy, national history, gender roles, sexual politics, the state and its opponents, theatrical conventions. Assessment may include opportunities for performance. Offered as ENGL 324, ENGL 424, and THTR 334. Prereq: Graduate standing.

ENGL 425. Shakespeare: Comedies and Romances. 3 Units.
Close reading of selected plays of Shakespeare in the genres of comedy and romance (e.g., "The Merchant of Venice," "Twelfth Night," "Measure for Measure," "The Tempest"). Topics of discussion may include issues of sexual desire, gender roles, marriage, the family, genre conventions. Assessment may include opportunities for performance. A student may not receive credit for both ENGL 325 and ENGL 325C. Offered as ENGL 325, ENGL 425, and THTR 335. Prereq: Graduate standing.

ENGL 427. Eighteenth-Century Literature. 3 Units.
Survey of a variety of writings from or relevant to the eighteenth century. Writers discussed may include Dryden, Behn, Defoe, Pope, Swift, Gay, Fielding, Richardson, Burney, Wollstonecraft and others working in drama, lyric and epic poetry, biography and autobiography, political and philosophical writings and prose fiction. Thematic approaches may include: satire, journalism and literature, the rise of the novel. Maximum 6 credits. Offered as ENGL 327 and ENGL 427. Prereq: Graduate standing or permission of instructor.

ENGL 428. Studies in the Eighteenth Century. 3 Units.
This course examines selected topics in the English literary culture of the eighteenth century, a culture which extended to the Americas and to other English colonies. Literary writings will be examined in relation to other aspects of the century's culture, which may include visual arts, marital institutions, the printing industry, property law, medicine, and other topics. Maximum 6 credits. Offered as ENGL 328 and ENGL 428. Prereq: Graduate standing.

ENGL 429. English Literature, 1780-1837. 3 Units.
Aspects of English literature and its contexts in the early 19th century. Genres might include poetry, prose fiction, political and philosophical writing, literary theory of the period. Writers such as Wordsworth, Coleridge, Blake, Austen, Byron, the Shelleys. Maximum 6 credits. Offered as ENGL 329 and ENGL 429. Prereq: Graduate standing.

ENGL 430. Victorian Literature. 3 Units.
Aspects of English literature and its contexts during the reign of Queen Victoria. Genres studied might include poetry, prose fiction, political and philosophical writing. Writers such as the Brontes, Gaskell, Dickens, Eliot, Hardy, Tennison, the Brownings, Arnold, Carlyle, Ruskin, Gosse, Swinburne, and Hopkinds. Maximum 6 credits. Offered as ENGL 330 and ENGL 430. Prereq: Graduate standing or permission of instructor.

ENGL 431. Studies in the Nineteenth-Century. 3 Units.
Individual topics in English literary culture of the 19th century. Topics might be thematic or formal, such as literature and science; medicine; labor; sexuality; Empire; literature and other arts; Gothic fiction; decadence. Maximum 6 credits. Offered as ENGL 331 and ENGL 431. Prereq: Graduate standing.

ENGL 432. Twentieth-Century British Literature. 3 Units.
Aspects of British literature (broadly interpreted) and its contexts during the 20th century. Genres studied might include poetry, fiction, and drama. Such writers as Joyce, Woolf, Conrad, Ford, Lawrence, Mansfield, Shaw, Beckett, Stoppard, Yeats, Edward or Dylan Thomas, Stevie Smith, Bowen, Spark. Maximum 6 credits. Offered as ENGL 332 and ENGL 432. Prereq: Graduate standing.

ENGL 433. Studies in the Twentieth and Twenty-first Centuries. 3 Units.
Individual topics in twentieth- and twenty-first century literary culture. Particular issues and topics may cross national boundaries and genre lines as well as exploring political, psychological, and social themes, such as movements, comparative studies across the arts, literature and war, literature and occultism. Maximum 6 credits. Offered as ENGL 333 and ENGL 433. Prereq: Graduate standing.

ENGL 441. Rhetoric of Science and Medicine. 3 Units.
This course explores the roles language and rhetoric play in constructing, communicating, and understanding science and medicine. It surveys current and historical debates, theories, research, and textual conventions of scientific and medical discourse. May be taught with a specific focus, such as scientific controversies, concepts of health and illness, visualizations of science, the body in medicine, and the history of scientific writing. Offered as: ENGL 341 and ENGL 441. Prereq: Graduate standing.
ENGL 443. Language and Gender. 3 Units.
This course introduces students to the study of language and gender by exploring historical and theoretical trends, methods, and research findings on the ways gender, sexuality, language, and discourse interact with and even shape each other. Topics may include "grammatical" versus "biological" gender, feminine écriture, the women and language debate, speech acts and queer performativity, nonsexist language policy, discourses of gender and sexuality, feminist stylistics, and LGBT sociolinguistics. Offered as: ENGL 343, ENGL 443, and WGST 343. Prereq: Graduate standing.

ENGL 445. Topics in LGBT Studies. 3 Units.
This course will focus on selected topics in the study of LGBT literature, film, theory, and culture. Individual courses may focus on such topics as queer theory, LGBT literature, queer cinema, gay and lesbian poetry, LGBT graphic novels, the AIDS memoir, AIDS/Gay Drama, and queer rhetoric and protest. Maximum 6 credits. Offered as ENGL 345, ENGL 445 and WGST 345.

ENGL 453. Major Writers. 3 Units.
Close and detailed study of the work of one or two writers: development, social and aesthetic contexts, reception, interpretation, significance. Maximum 6 credits. Offered as ENGL 353 and ENGL 453. Prereq: Graduate standing.

ENGL 456. American Literature Before 1865. 3 Units.
Aspects of American literature and its contexts from the colonial period through the end of the Civil War. Writers such as Bradstreet, Taylor, Franklin, Poe, Stowe, Alcott, Melville, Hawthorne, Emerson, Douglass. Maximum 6 credits. Offered as ENGL 356 and ENGL 456. Prereq: Graduate standing.

ENGL 458. American Literature 1914-1960. 3 Units.
Aspects of American literature and its contexts from the First World War to the Cold War. Genres studied might include fiction, poetry, drama, polemics. Writers such as T.S. Eliot, Pound, Stevens, Moore, W.C. Williams, Dos Passos, West, Fitzgerald, Hemingway, Cather, Faulkner, Barnes, Miller, T. Williams, O'Neill. Maximum 6 credits. Offered as ENGL 358 and ENGL 458. Prereq: Graduate standing.

ENGL 459. Studies in Contemporary American Literature. 3 Units.
Individual topics in literary culture since the 1960s. Topics may include the Beats, literature of the Vietnam war, post-modern fiction, contemporary poetry, the documentary novel. Maximum 6 credits. Offered as ENGL 359 and ENGL 459. Prereq: Graduate standing.

ENGL 460. Studies in American Literature. 3 Units.
Individual topics in American literary culture such as regionalism, realism, impressionism, literature and popular culture, transcendentalism, the lyric, proletarian literature, the legacy of the Civil War. Maximum 6 credits. Offered as ENGL 360 and ENGL 460. Prereq: Graduate standing or permission of instructor.

ENGL 463H. African-American Literature. 3 Units.
A historical approach to African-American literature. Such writers as Wheatley, Equiano, Douglass, Jacobs, DuBois, Hurston, Hughes, Wright, Baldwin, Ellison, Morrison. Topics covered may include slave narratives, African-American autobiography, the Harlem Renaissance, the Black Aesthetic, literature of protest and assimilation. Maximum 6 credits. Offered as ENGL 363H, ETHS 363H, WLIT 363H, ENGL 463H, and WLIT 463H. Prereq: Graduate standing.

ENGL 465E. The Immigrant Experience. 3 Units.
Study of fictional and/or autobiographical narrative by authors whose families have experienced immigration to the U.S. Among the ethnic groups represented are Asian-American, Jewish-American, Hispanic-American. May include several ethnic groups or focus on a single one. Attention is paid to historical and social aspects of immigration and ethnicity. Maximum 6 credits. Offered as ENGL 365E, WLIT 365E, ENGL 465E, and WLIT 465E. Prereq: Graduate standing.

ENGL 465N. Topics in African-American Literature. 3 Units.
Selected topics and writers from nineteenth, twentieth, and twenty-first century African-American literature. May focus on a genre, a single author or a group of authors, a theme or themes. Maximum 6 credits. Offered as ENGL 365N, ETHS 365N, WLIT 365N, ENGL 465N, and WLIT 465N. Prereq: Graduate standing.

ENGL 465Q. Post-Colonial Literature. 3 Units.
Readings in national and regional literatures from former European colonies such as Australia and African countries. Maximum 6 credits. Offered as ENGL 365Q, ETHS 365Q, WLIT 365Q, ENGL 465Q, and WLIT 465Q. Prereq: Graduate standing.

ENGL 466G. Minority Literatures. 3 Units.
A course dealing with literature produced by ethnic and racial minority groups within the U.S. Individual offerings may include works from several groups studied comparatively, or focus on a single group, such as Native Americans, Chicanos/Chicanas, Asian-Americans, Caribbean-Americans. African-American works may also be included. May cover the entire history of the U.S. or shorter periods. Maximum 6 credits. Offered as ENGL 366G, WLIT 366G, ENGL 466G, and WLIT 466G. Prereq: Graduate standing.

ENGL 467. Introduction to Film. 3 Units.
An introduction to the aesthetics of film form. We will analyze the elements that make up a film, screening films that facilitate our discussion of how these elements interact with one another to constitute whole formal systems that generate meanings and other effects. We will bring various theoretical and historical considerations to bear as we explore and appreciate the art of cinema. Offered as ENGL 367 and ENGL 467. Prereq: Graduate standing.

ENGL 468. Topics in Film. 3 Units.
Individual topics in film, such as a particular national cinema, horror films, films of Alfred Hitchcock, images of women in film, film comedy, introduction to film genres, Asian-cinema and drama, dance on screen, science fiction films, storytelling and cinema, and literature and film. Maximum 15 credits. A student who has previously taken ENGL 368C may receive credit for ENGL 368 only if the themes/topics are different. Offered as ENGL 368, ENGL 468, WLIT 368, and WLIT 468. Prereq: Graduate standing.

ENGL 469. Children’s Literature. 3 Units.
Individual topics in 19th-, 20th-, and 21st-century children's literature. Topics may focus on narrative and thematic developments in the genre, historical contexts, literary influences, or adaptations of children's literature into film and other media. Offered as ENGL 369 and ENGL 469. Prereq: Graduate standing.

ENGL 471. Topics in Women's and Gender Studies. 3 Units.
Individual topics and issues in women's studies relating to writing by and about women, such as feminist theory and criticism; the politics of gender and sexuality; women in popular culture; women in the writing business. Maximum 6 credits. Offered as ENGL 371 and ENGL 471. Prereq: Graduate standing.
ENGL 472. Studies in the Novel. 3 Units.
Selected topics in the history and formal development of the novel, such as detective novels; science fiction; epistolary novels; the rise of the novel; the stream of consciousness novel; the Bildungsroman in English. Maximum 6 credits. Offered as ENGL 372 and ENGL 472. Prereq: Graduate standing.

ENGL 473. Studies in Poetry. 3 Units.
Selected topics and issues in the study of poetry, such as reading poetry, the elegy, pastoral poetry, love poetry, the long poem, form and meter in poetry. Maximum 6 credits. Offered as ENGL 373 and ENGL 473. Prereq: Graduate standing.

ENGL 476. Studies in Genre. 3 Units.
Topics in literary genres, such as comedy, biography and autobiography, satire, allegory, the short story, the apologue, narrative poetry. May cross over the prose/poetry boundary. Maximum 6 credits. Offered as ENGL 376 and ENGL 476. Prereq: Graduate standing.

ENGL 477. Studies in Drama. 3 Units.
Readings and discussion of plays and related critical literature pertaining to a specific period in American or British drama. Topics and material will vary from semester to semester. Offered as ENGL 377 and ENGL 477. Prereq: Graduate standing.

ENGL 478. Topics in Visual and New Media Studies. 3 Units.
This course will focus on selected topics in the study of visual rhetoric and/or new media, including theoretical, critical, and historical issues raised by texts and media platforms that communicate largely through visual means or through the interaction of visual and verbal modes. Possible syllabi may focus on topics such as visual rhetoric; new media story-telling; historical perspectives on visual rhetoric and/or new media; concentrations on a particular genre (for instance, the graphic novel, video games, etc.); visual narrative; theories of new media; etc. Offered as ENGL 378 and ENGL 478. Prereq: Graduate standing.

ENGL 479. Topics in Language Studies. 3 Units.
Aspects of contemporary language studies. Topics might include history/ theories of rhetoric, discourse studies, cognitive linguistics, metaphor, language acquisition, stylistics. Maximum 9 credits. Offered as ENGL 379 and ENGL 479. Prereq: Graduate standing.

ENGL 485. Special Topics in Literature. 3 Units.
Close study of a theme or aspect of literature not covered by traditional generic or period rubrics, such as "spatial imagination," "semiotics of fashion in literature," "epistolarity." Maximum 9 credits. Offered as ENGL 385 and ENGL 485. Prereq: Graduate standing.

ENGL 486. Studies in Literature and Culture. 3 Units.
Boundary-crossing study of the relations between literary and other aspects of a particular culture or society, including theoretical and critical issues raised by such study. For example, literature and medicine, law and literature, gay and lesbian literature, Asian/Western literary relations, emotion in literature, philosophy and literature, literature and music. Maximum 9 credits. Offered as ENGL 386 and ENGL 486. Prereq: Graduate standing.

ENGL 487. Literary and Critical Theory. 3 Units.
A survey of major schools and texts of literary and critical theory. May be historically or thematically organized. Maximum 6 credits. Offered as ENGL 387, WLIT 387, ENGL 487, and WLIT 487. Prereq: Graduate standing.

ENGL 488. Critical Theory and Contemporary Culture. 3 Units.
Topics in critical theory and contemporary culture, such as critical theory and visual culture, theories of new media, theories of contemporary culture, narrative theory and visual culture, theories of the novel. May cross over the prose/poetry boundary. Maximum 6 credits. Offered as ENGL 388 and ENGL 488. Prereq: Graduate standing.

ENGL 500. Professional Writing: Theory and Practice. 3 Units.
Prepares graduate students to teach disciplinary forms of writing, including technical and professional writing, in academic and non-academic settings. Prereq: ENGL 400.

ENGL 501. Writing History and Theory. 3 Units.
This course addresses general research methods and theories specific to the study of writing, and functions as a required core course and overview for the Writing, History and Theory (WHIT) sequence in the English Department's Ph.D. program. Prereq: Graduate standing.

ENGL 506. Professional Writing: Theory and Practice. 3 Units.
Prepares graduate students to teach disciplinary forms of writing, including technical and professional writing, in academic and non-academic settings. Prereq: ENGL 400.

ENGL 508. Seminar: English Literature 1550-1660. 3 Units.
Prereq: Graduate standing.

ENGL 509. Seminar: English Literature 1660-1800. 3 Units.
Prereq: Graduate standing.

ENGL 510. Research Methods. 3 Units.
This course focuses on methods and resources for research in English, including substantial treatments of narrative, poetic, and close-reading skills. It also introduces graduate students to questions of textuality, genre, medium, authorship, reception, historiography, and bibliography. Prereq: Graduate standing or permission of instructor.

ENGL 517. Seminar: American Literature. 3 Units.
Prereq: Graduate standing.

ENGL 518. Seminar: English Literature 1660-1800. 3 Units.
Prereq: Graduate standing.

ENGL 519. Seminar: English Literature 1800-1900. 3 Units.
Prereq: Graduate standing.

ENGL 520. Seminar: 20th Century Literature. 3 Units.
Prereq: Graduate standing.

ENGL 521. Seminar: The Novel. 3 Units.
Prereq: Graduate standing.

ENGL 522. Seminar: Topics in Poetry. 3 Units.
Prereq: Graduate standing.

ENGL 524. Seminar: Criticism and Other Special Topics. 3 Units.
Prereq: Graduate standing.

ENGL 525. Intellectual Property and the Construction of Authorship. 3 Units.
Study of the concepts, laws, norms, and practices through which writers and other creative producers establish "property" in their work. Offered as ENGL 525 and HSTY 525. Prereq: Graduate standing or permission.

ENGL 550. External Seminar. 3 Units.
Coursework offered in cooperation with participating English departments in the region; content and approach vary. Requires prior approval of the Graduate Director.

ENGL 559. Special Reading or Research. 3 Units.
Independent study as arranged with individual instructors. Prereq: Graduate status or consent of department.

ENGL 601. Directed Reading. 1 - 6 Unit.
Preparation for the Ph.D. general examination. Prereq: Graduate status.

ENGL 651. Thesis M.A.. 1 - 18 Unit.
Prereq: Graduate standing.

ENGL 701. Dissertation Ph.D.. 1 - 9 Unit.
Prereq: Predoctoral research consent or advanced to Ph.D. candidacy milestone.

Environmental Studies Program

Environmental studies is a multidisciplinary program that introduces students to the societal determinants and implications of environmental problems. The program emphasizes the moral, cultural, and political
dimensions of environmental problems and solutions that arise from scientific understanding of the environment, bringing to bear the issues and methods of the humanities and social sciences as well as those of the sciences and the professions. The program is designed to serve the needs of students seeking a liberal education or a broad intellectual base for more technical training in environmental sciences. Students can pursue a major or a minor in environmental studies.

Undergraduate Programs

Major

The Environmental Studies Program offers a major (30 credit hours) leading to the Bachelor of Arts degree. However, it may be elected only as a second major. The double major is required so that the program's multidisciplinary perspective will be complemented by a concentrated disciplinary major. Students may apply up to six credits from required and elective courses in their first major to the environmental studies major. None of the required courses may be taken pass/no pass.

The required courses are:

Required courses

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>ESTD 101</td>
<td>Introduction to Environmental Thinking</td>
<td>3</td>
</tr>
<tr>
<td>ESTD 398</td>
<td>Seminar in Environmental Studies</td>
<td>3</td>
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<tr>
<td>or ESTD 399</td>
<td>Departmental Seminar in Environmental Studies</td>
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<tr>
<td>One course from each of the following disciplinary groups:</td>
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<tr>
<td>Humanities</td>
<td>RLGN 206 Religion and Ecology</td>
<td>3</td>
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<td></td>
<td>HSTY 292 Energy and Environment in American History 1750-2010</td>
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<td>HSTY 327 Comparative Environmental History</td>
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<td>HSTY 378 North American Environmental History</td>
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<td>PHIL 330 Topics in Ethics</td>
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<tr>
<td>Social Policy</td>
<td>ESTD 303 Environmental Law</td>
<td>3</td>
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<td>ESTD 388 Politics, Policy, and the Global Environment</td>
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<td>ECON 368 Environmental Economics</td>
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<tr>
<td>Science and Engineering</td>
<td>ESTD 202 Global Environmental Problems</td>
<td>3</td>
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<td></td>
<td>BIOL 351 Principles of Ecology</td>
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<td></td>
<td>EECS 342 Introduction to Global Issues</td>
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</tbody>
</table>

Fifteen additional hours chosen in consultation with the departmental advisor.

Total Units 15

Program Faculty

Peter L. McCall, JD, PhD
Professor, Department of Earth, Environmental, and Planetary Sciences; Director, Environmental Studies Program

Jeremy Bendik-Keymer, PhD
Elmer G. Beamer-Hubert H. Schneider Professor in Ethics; Associate Professor, Department of Philosophy

John Broich, PhD
Associate Professor, Department of History

Gerald Matisoff, PhD
Professor, Department of Earth, Environmental, and Planetary Sciences

John Ruhl, PhD
Connecticut Professor, Department of Physics

Peter Shulman, PhD
Associate Professor, Department of History

Theodore Steinberg, PhD
Adeline Barry Davee Distinguished Professor of History

Courses

ESTD 101. Introduction to Environmental Thinking. 3 Units.
Critical comparison of scientific, historical, religious, and literary conceptions of nature. Theories of environmental ethics, legal, and economic conceptions of environmental goods. Current controversies concerning human population growth, energy use, the consumer society, and attitudes towards animals.
and around the world. The program's objectives are:

1. to examine relationships among racial/ethnic groups, the processes of racial/ethnic formation, and their intersections with class, gender, and sexuality at the personal and collective levels
2. to foster the development of research skills in a broad range of disciplines in the humanities
3. to contribute to an interdisciplinary knowledge of the challenges and contributions of ethnic minorities in the United States
4. to impart to students a deep knowledge of the cultures of Africa and Latin America
5. to help students develop competencies for working with people of different racial/ethnic backgrounds and to foster an understanding of racial/ethnic diversity
6. to support students and faculty in the transmission of knowledge, in the discovery and development of new ideas, and in research and writing in the field of ethnic studies
7. to inculcate in students an understanding of the complexity and challenges of multiethnic societies, and to prepare them for careers in education, business, law, government service, social work, social welfare, health care, teaching, public policy, law enforcement, urban and community development, and the arts.

Ethnic Studies is an interdisciplinary program. The program aims to develop fundamental skills in critical and global thinking and in comparative analysis, as well as an understanding of the interactions of race, class, gender, and sexuality in the experiences of a range of social groups. It is designed to bring together a community of students, faculty, and staff devoted to the transmission of knowledge and the discovery of new ideas in the field of ethnic studies. Ethnic Studies also offers diverse perspectives that challenge monolithic thinking about the formation of identities and societies.

The program's core courses focus on the exploration and comparison of the cultures, history, politics, and economics of Africa, Latin America, and their diasporas. Program offerings explore ethnicity and cross-cultural exchange globally and in postcolonial frames. Ethnic Studies supports research pertinent to the field and encourages cultural and academic exchange among scholars and students.

The program is part of the university's mission to enhance the recruitment, retention, and excellence of a diverse faculty and student body. Our long-term goals are to extend program offerings to encompass other ethnic minority groups and to develop a center that will foster an appreciation of ethnic diversity and difference in the learning and research communities of Case Western Reserve University.

Undergraduate Program

Minor

The Ethnic Studies minor is open to all undergraduate students. It requires a minimum of 15 credit hours. Students are required to take 6 credits from among Ethnic Studies core courses and 9 credits in their chosen areas of concentration. Community projects are strongly recommended, and students are encouraged to carry out field research in their areas of concentration.

The core courses are designed to introduce students to the interdisciplinary field of ethnic studies. Courses may be individually or team taught and will sometimes be conducted in seminar format. Students are encouraged to use the tools and perspectives of several disciplines (history, literature, art history, anthropology, film, sociology, and political science, for example) to address the experiences of African-

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**ESTD 202. Global Environmental Problems. 3 Units.**

Global Environmental Problems is a course designed to provide students with an understanding of, and an appreciation for, human-influenced environmental changes that are global in scope. Accordingly, much of the material will focus on the nature and structure of natural global systems, how and where in those systems human influences occur, and will delve deeply into a few particular problems and solutions of current interest, such as population growth, climate change, ozone depletion, and fisheries, from a variety of viewpoints. Offered as ESTD 202 and EEPS 202.

**ESTD 303. Environmental Law. 3 Units.**

Introduction to treatment of environmental issues in legal proceedings. Sources of environmental law, legal procedure, common law remedies (toxic torts and human health, nuisance, contract law), statutes and regulations, endangered species, public lands, toxics regulation, nuclear power, coal. The course employs the case method of reading and recitation of appellate judicial opinions. We read both classic cases in environmental law as well as current controversies. Offered as ESTD 303 and EEPS 303.

**ESTD 388. Politics, Policy, and the Global Environment. 3 Units.**

This course examines the law, politics and policy surrounding global environmental challenges such as climate change. The course aims to provide a broad overview of the key concepts, actors, debates, and issues in global environmental politics. It aims to illustrate the complexities of addressing environmental problems from the proliferation of global institutions and international actors, to the absence of central enforcement mechanisms. We examine the causes of environmental degradation and competing views on the gravity of the problem. Using concepts from political science and economics, we investigate the challenges in getting states to act jointly to address environmental problems. We examine the actors and institutions of global environmental politics, to understand how conditions are defined as problems and responses are chosen and implemented. The course concludes by applying the tools and concepts to the case of climate change. Offered as POSC 388, ESTD 388, POSC 488.

**ESTD 398. Seminar in Environmental Studies. 3 Units.**

Small group discussion and student presentations concerning the cultural determinants of environmental attitudes and policies. Each student participates in all weekly discussions and leads at least one seminar. Prereq: ESTD 101 or previous credit for ESTD 398.

**ESTD 399. Departmental Seminar in Environmental Studies. 3 Units.**

Discussion and critique of recent publications in Environmental Studies. Students write weekly short essays on readings and participate in weekly group discussion. Reading list changes annually and is typically comprised of 7-9 books that center on a few unifying themes for that year (food, energy, futures, toxic torts, attitudes toward animals, consumer culture, climate crises for example). Students research, write, and defend a critical review of academic literature concerning some topic contained in the readings. Prior enrollment in ESTD 101 is recommended but not required. Students may not enroll in both ESTD 399 and 398 in the same year.

**Ethnic Studies Program**

The goal of the Ethnic Studies Program is to expand and enhance the university's course offerings on ethnicity and race in the United States and around the world. The program's objectives are:
Ethnic Studies Program

Americans and Latino/a Americans. Courses center on the examination of social, cultural, political, and economic structures that shape the life of these ethnic minorities in the United States. They examine how race, class, and gender have impacted their identities as well as their economic, social, political, and cultural productions. Assignments and courses make maximum use of the archives and collections of University Circle institutions.

**Required Courses:**
- ETHS 251 Perspectives in Ethnicity, Race, Religion and Gender
- ETHS 252A Introduction to African-American Studies
- ETHS 252B Introduction to Latina/o Studies
- ETHS 253A/ HSTY 135 Introduction to Modern African History
- ETHS 253B Introduction to Latin American History

Nine hours chosen from one of the concentrations listed below

**Total Units** 15

### Concentrations

#### African Studies Concentration

Any three of the following courses:
- COSI 260 Multicultural Aspects of Human Communication
- ECON 375 Economics of Developing Countries
- ETHS 235 Theater and Identity
- ETHS 251A Oral Performances and Ethnic Identities
- ETHS 252A Introduction to African-American Studies
- ETHS 394 The Subaltern and The Poetics of War in Africa
- FRCH/ETHS 338 The Cameroonian Experience
- FRCH/WLIT 295 The Francophone World
- FRCH/WLIT 308 The Paris Experience
- POSC 366 Government and Politics of Africa

**Total Units** 9

#### African-American Studies Concentration

Any three of the following courses:
- COSI 260 Multicultural Aspects of Human Communication
- ECON 375 Economics of Developing Countries
- ENGL 365N Topics in African-American Literature
- ETHS 222 African-American Religions
- HSTY 260 U.S. Slavery and Emancipation
- HSTY 261 African-American History 1865-1945
- HSTY 262 African-American History Since 1945
- HSTY 318 History of Black Women in the U.S.

**Total Units** 9

#### Latin American and Caribbean Studies Concentration

Any three of the following courses:
- COSI 260 Multicultural Aspects of Human Communication
- ECON 375 Economics of Developing Countries
- ETHS 287 State, War, Drugs, and Coffee in Colombia: History of Modern Colombia
- POSC 364 Dictatorship and Democracy in Modern Latin America
- SPAN 322 Latin American Short Story
- SPAN 326 The Fantastic in Latin American Prose
- SPAN 339 Latin American Poetic Revolt
- SPAN 342 Latin American Feminist Voices
- SPAN 343 The New Drama in Latin American
- SPAN 370 Special Topics in Spanish
- SPAN 385 Hispanic Literature in Translation

**Total Units** 9

### Program Faculty

**Cheryl Toman, PhD**  
(University of Illinois at Urbana-Champaign)  
*Associate Professor, Department of Modern Languages and Literatures; Director, Ethnic Studies Program*

Women in Sub-Saharan Africa and the Middle East

**Joy Bostic, PhD**  
(Union Theological Seminary)  
*Associate Professor, Department of Religious Studies*

African American Religion and Culture

**M. Gabriela Copertari, PhD**  
(Georgetown University)  
*Associate Professor, Department of Modern Languages and Literatures*

Latin American literature and film
Offered as ETHS 220, HSTY 220.

merchant culture, diplomacy, honor and shame, slavery and colonization.

civilizations or provide an enduring model for coexistence? Topics include

circulated through it during the sixteenth, seventeenth, and eighteenth

centuries. Does the early modern Mediterranean showcase a clash of

ethnicity divided Muslims, Christians and Jews from Algiers to Athens, did

the contours of the Mediterranean Sea--and engaged in commerce,

from the Spanish expulsion through the French Revolution. Tracking

peregrinations out of the Iberian Peninsula to the British Isles, France,

Holland, Italy, Germany, Poland-Lithuania, the Ottoman Empire, and

the American colonies, it examines the diverse ways Jews organized

their communities, interacted with their non-Jewish neighbors, and

negotiated their social, economic, and legal status within different states

and empires. What role did Jews play and what symbolic place did

they occupy during a period of European expansion, technological

innovation, artistic experimentation, and religious and political turmoil?

What internal and external dynamics affected Jewish experiences in the

Middle Ages to the present. Over the last millennium, France has

viewed Saracens, Moriscos, Turks, Berbers, and Arabs with admiration

and cultural impact of French citizens of North African descent are

began in 1830 ended violently in 1962. By then, the empire that struck

hundred years after that, France and the Ottoman Empire exchanged

thirteenth centuries, French soldiers battled in the Holy Land; for several

viewed Saracens, Moriscos, Turks, Berbers, and Arabs with admiration

This seminar examines French encounters with the Muslim world from the

Middle Ages to the present. The course investigates the diverse racial and ethnic communities that increasingly define U.S. Catholicism and includes a particular focus on Africans and African Americans, Latina/os, and Asian Americans. Attention will be given to the intersections of faith, ethnicity, race, and identity constructions in contemporary U.S. Catholicism, as well as issues of racism and racial justice in the U.S. Catholic Church and other social, cultural, and political dynamics that are shaping and transforming contemporary Catholic identities in the United States. Offered as ETHS 224 and RLGN 224. Counts as SAGES Departmental Seminar.

This course explores the implications of immigration and changing demographics on the contemporary U.S. Catholic Church. The course investigates the diverse racial and ethnic communities that increasingly define U.S. Catholicism and includes a particular focus on Africans and African Americans, Latina/os, and Asian Americans. Attention will be given to the intersections of faith, ethnicity, race, and identity constructions in contemporary U.S. Catholicism, as well as issues of racism and racial justice in the U.S. Catholic Church and other social, cultural, and political dynamics that are shaping and transforming contemporary Catholic identities in the United States. Offered as ETHS 224 and RLGN 224. Counts as SAGES Departmental Seminar.

In this class we will interrogate the cultural Identity(ies) and imagined community(ies) of the "South Asian" Diaspora. We will first examine taxonomy and categorization itself, as a methodical, philosophical, and political enterprise. We will then examine how such contrived categories have been applied to the so-called desis, loosely and broadly understood as members of the South Asian Diaspora. To this end we will scrutinize the development of American(ized) "Hinduism." the imagined location that desis have in North American racial and ethnic hierarchies, and the construction of assimilated, enculturated, and transnational imagined desi communities. Offered as RLGN 232, ETHS 232 and HSTY 232

This seminar examines French encounters with the Muslim world from the Middle Ages to the present. Over the last millennium, France has viewed Saracens, Moriscos, Turks, Berbers, and Arabs with admiration and fear, disdain and incomprehension. Between the eleventh and thirteenth centuries, French soldiers battled in the Holy Land; for several hundred years after that, France and the Ottoman Empire exchanged diplomats, traders and slaves. The colonial occupation of Algeria that began in 1830 ended violently in 1962. By then, the empire that struck back had also come home through large waves of immigration. Today, the social and economic status, religious affiliation, political significance and cultural impact of French citizens of North African descent are the subject of burning national debate. Taking a long view on Franco-Muslim relations, the course will explore such topics as the Crusades, Mediterranean piracy and captivity, Napoleon's Egyptian campaign, the Algerian War of Independence, the "veil affair," riots in the suburbs of Paris and World Cup soccer. Offered as ETHS 234, HSTY 234. Counts as SAGES Departmental Seminar.

This course surveys the history of Jews in Europe and the wider world from the Spanish expulsion through the French Revolution. Tracking peregrinations out of the Iberian Peninsula to the British Isles, France, Holland, Italy, Germany, Poland-Lithuania, the Ottoman Empire, and the American colonies, it examines the diverse ways Jews organized their communities, interacted with their non-Jewish neighbors, and negotiated their social, economic, and legal status within different states and empires. What role did Jews play and what symbolic place did they occupy during a period of European expansion, technological innovation, artistic experimentation, and religious and political turmoil? What internal and external dynamics affected Jewish experiences in the sixteenth, seventeenth, and eighteenth centuries? Through a selection of inquisitorial transcripts, government records, memoirs, and historical literature, we will explore topics such as persecution, conversion, messianism, toleration, emancipation, and assimilation. Offered as HSTY 218, JDST 218, and ETHS 218. Counts as SAGES Departmental Seminar.

For centuries before Columbus crossed the Atlantic Ocean, travelers and traders, pirates and pilgrims, mercenaries and missionaries explored the contours of the Mediterranean Sea--and engaged in commerce, as well as religious, economic and military competition. If religion and ethnicity divided Muslims, Christians and Jews from Algiers to Athens, did shared geography, foodstuffs, and cultural values bind them together? This course examines the unity and diversity of this maritime region by considering the peoples, beliefs, commodities and diseases that circulated through it during the sixteenth, seventeenth, and eighteenth centuries. Does the early modern Mediterranean showcase a clash of civilizations or provide an enduring model for coexistence? Topics include merchant culture, diplomacy, honor and shame, slavery and colonization. Offered as ETHS 220, HSTY 220.

Offered as ETHS 222 and RLGN 222.

ETHS 224. The Many Faces of Contemporary U.S. Catholicism. 3 Units.

ETHS 224. France and Islam. 3 Units.

ETHS 224. The Many Faces of Contemporary U.S. Catholicism. 3 Units.

This course is an exploration of the rich diversity of African American religions from the colonial period to the present. Attention will be given to key figures, institutional expressions, and significant movements in African American religious history. Major themes include African traditions in American religions, slavery and religion, sacred music, social protest, Black Nationalism in religion, Islam, African American women and religion, and black and womanist theologies. Course requirements will include field trips to local religious sites. Offered as ETHS 222 and RLGN 222.

ETHS 232. DESI: Diaspora, Ethnicity, Southasia(n), Interrogate. 3 Units.

This course is an exploration of the rich diversity of African American religions from the colonial period to the present. Attention will be given to key figures, institutional expressions, and significant movements in African American religious history. Major themes include African traditions in American religions, slavery and religion, sacred music, social protest, Black Nationalism in religion, Islam, African American women and religion, and black and womanist theologies. Course requirements will include field trips to local religious sites. Offered as ETHS 222 and RLGN 222.

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ETHS 234. France and Islam. 3 Units.

ETHS 234. France and Islam. 3 Units.
ETHS 235. Theater and Identity. 3 Units.
This course aims at surveying identities in dramatic and performance texts in the modern era. It will help students develop skills to study plays and related theatrical forms, to analyze images for their social and political meanings, to investigate issues of identity, to appreciate the complexities of identity and images of self and other as related in theater, media and the larger political and social contests. African and African-American identities, Latina/o-American and Latin American identities, Native-American identities, Asian-American and Asian identities, Gender identities will be examined.

ETHS 251. Perspectives in Ethnicity, Race, Religion and Gender. 3 Units.
This course is designed to introduce students to the study of ethnicity. Basic concepts such as race, gender, class, and identity construction will be examined. Students are encouraged to use the tools and perspectives of several disciplines to address the experiences of ethnic groups in the United States. Offered as ETHS 251 and RLGN 251.

ETHS 251A. Oral Performances and Ethnic Identities. 3 Units.
This course is an in-depth study of performances that have helped to shape and anchor the identities of different non-Western ethnic groups. The course will explore the multi-generic composition of the oral epic, which combines forms as diverse as narrative, song, praise poetry, theater, music and historical oratory. ETHS 251A will provide a comprehensive overview of oral performances while focusing on a particular area or areas of Africa, Asia, the United States, or Latin America. In the African continent, for example, the focus will be on the Madinka Sundjata corpus, dealing with the empire of Mali; the life of Shaka, the Zulu in South Africa; while in the United States, the narrative life of Frederick Douglas, blues and negro-spiritual will be considered as the sites of ethnic discourse. Using a comparative approach, the course will examine aesthetic issues of oral performance, the written word, interactions between music and voice, and interaction between poetic and prose narrative forms. The performance texts will be augmented by field recordings and in-class demonstrations by griots and other storytellers from Africa and the United States.

ETHS 252A. Introduction to African-American Studies. 3 Units.
This course is designed to introduce students to the study of Black History, cultures, economics, and politics. Students will learn about the development of the field by exploring theoretical questions, methodological approaches, and major themes that have shaped the study of black people, primarily in the U.S. context. This is a seminar-style, discussion-based course that emphasizes critical analysis and expository writing. Offered as ETHS 252A and HSTY 252A.

ETHS 252B. Introduction to Latina/o Studies. 3 Units.
Interdisciplinary introduction to the basis for a Latina/o ethnicity through an exploration of commonalities and differences in the peoples of Latin American and Caribbean origin within the continental United States. Topics include methodological and theoretical formulations central to the field (e.g., racial, gender, and sexual formations, modes and relations of production and class, nation and transnation), history and contemporary issues of identity, family, community, immigration, and the potential for a pan-ethnic identity. Discussions will focus on major demographic, social, economic and political trends: historical roots of Latinas/os in the U.S.; the evolution of Latina/o ethnicity and identity; immigration and the formation of Latina/o communities; schooling and language usage; tendencies and determinants of socioeconomic and labor force status; discrimination, segregation and bias in contemporary America; racial and gender relations; and political behavior among Latinas/os. Offered as: ETHS 252B and HSTY 259.

ETHS 253A. Introduction to Modern African History. 3 Units.
A general introduction to major themes in modern African history, with an emphasis on the nineteenth and twentieth centuries. Topics include oral tradition and narrative, economic structure and dynamics, religious movements, colonialism, nationalism, and the dilemmas of independent African states. Offered as ETHS 253A and HSTY 135.

ETHS 253B. Introduction to Latin American History. 3 Units.
This course provides an introduction to the historical and cultural development of Latin America, in an attempt to identify the forces, both internal and external, which shape the social, economic and political realities in present day Latin America. Beginning with its pre-Columbian civilizations, the course moves through the conquest and colonial period of the Americas, the wars of independence and the emergence of nation-states in the nineteenth century, and the issues confronting the region throughout the turbulent twentieth century, such as migration and urbanization, popular protest and revolution, environmental degradation, great power intervention, the drug trade and corruption, and the integration of the region into the global economy. Offered as ETHS 253B and HSTY 136.

ETHS 254. The Holocaust. 3 Units.
This class seeks to answer fundamental questions about the Holocaust: the German-led organized mass murder of nearly six million Jews and millions of other ethnic and religious minorities. It will investigate the origins and development of racism in modern European society, the manifestations of that racism, and responses to persecution. An additional focus of the course will be comparisons between different groups, different countries, and different phases during the Nazi era. Offered as HSTY 254, RLGN 254, ETHS 254, and JDST 254.

ETHS 260. U.S. Slavery and Emancipation. 3 Units.
Begins with the African encounter with Europeans during the emergence of the modern slave trade. Students are introduced to the documents and secondary literature on the creation and maintenance of slavery, first in colonial America, and then in the United States. The course concludes with the destruction of slavery. Offered as ETHS 260 and HSTY 260.

ETHS 261. African-American History 1865-1945. 3 Units.
Explores the fashioning of a modern African-American culture between emancipation and the end of World War II. Emergence of a northern-based leadership, the challenge of segregation, emergence of bourgeois culture, the fashioning of racial consciousness and black nationalism, the shift from a primarily southern and rural population to one increasingly northern and urban, the creation and contours of a modern African-American culture, the construction of racial/gender and racial/class consciousness. Offered as ETHS 261 and HSTY 261.

ETHS 262. African-American History Since 1945. 3 Units.
Completes the three-term sequence of the African-American history survey (although the first two courses are not prerequisites for this course). Explores some of the key events and developments shaping African-American social, political, and cultural history since 1945. Offered as HSTY 262 and ETHS 262.
ETHS 265. Malcolm and Martin. 3 Units.
An examination of the lives, religious thought, and ideological frameworks of Malcolm X and Martin Luther King, Jr. The course will investigate Malcolm X and Martin King's religious beliefs and activist strategies; the ideas and strategies of other civil rights and Black Nationalist leaders who influenced and challenged Martin and Malcolm's ideas on race, gender, class, and sexuality; and the historical antecedents for these strategies within the twentieth-century black religious, social, and political movements. Their impact on modern African American religious thought, American political culture, and international human rights movements will also be explored. Offered as ETHS 265 and RLGN 265.

ETHS 280. History of Modern Mexico. 3 Units.
This course explores the major issues that have influenced the formation of modern Mexico. This class is organized around three major themes. First, we will examine Mexican identity formation and its political implications. Second, we will assess Mexican life in relation to the development of the Mexican economy. Finally, we will survey how elite and popular forms of violence have affected Mexican society. Throughout the course, we will discuss the significance of the colonial heritage, regional distinctions, racial and gender stratification, and the creation and reconfiguration of various types of borders. Offered as HSTY 280 and ETHS 280.

ETHS 287. State, War, Drugs, and Coffee in Colombia: History of Modern Colombia. 3 Units.
This course will analyze the major forces that have shaped Colombian history from the 19th century to the present. Colombia is one of the largest and most fascinating countries in Latin America. It has been intricately linked to the U.S. market as a major coffee producer and, more recently, as a major supplier of illicit drugs. Colombia has always been one of the wealthier Latin American countries, and it has a high degree of electoral democracy. Paradoxically, however, Colombia has also experienced rather high levels of regionalism and political violence. This course seeks to explore the history of these paradoxes. It will situate Colombia's contemporary conflicts within a larger historical perspective. Offered as ETHS 287 and HSTY 287.

ETHS 295. The Francophone World. 3 Units.
The course offers an introduction to the Francophone World from a historical, cultural, and literary perspective. The Francophone World includes countries and regions around the globe with a substantial French-speaking population (and where French is sometimes, but not always, an official language): North America (Louisiana, Quebec, and Acadia); North Africa (Tunisia, Morocco, Algeria, and Egypt); the Middle East (Lebanon, Syria); the Caribbean (Martinique, Guadeloupe, Haiti); Southeast Asia (Vietnam); and Europe (France, Belgium, Switzerland, and Luxembourg). FRCH 295 provides a comprehensive overview of the Francophone World, while focusing on a particular area or areas in any given semester. Offered as ETHS 295, FRCH 295, and WLIT 295.

ETHS 301. Women, Creativity and the Arts. 3 Units.
WGST301/ETHS301 is one of two core courses for the program in Women's and Gender Studies and an elective course for the ETHS minor. All WGST majors are to take one course concentrating on the subject of women and the arts specifically. This course also fulfills the cultural diversity requirement. In this course, students will focus on two areas of study: a) women and creativity and b) women and activism through the arts. A history of women in the arts will be covered, but the general focus of the course is on women in the arts since the 1960s in particular, and on artwork that reflects or provokes social change. "Arts" are defined in the broadest of sense. That is, students will study women's production in painting, photography, graphic design, sculpture, dance, film, music, and theater. A variety of learning techniques will be applied: Students will look at feminist theories on art, be introduced to the notion of cyberfeminism, study actual artwork and its reproductions, understand the role of are in feminist activism and how women "create" differently from men, and work closely with several feminist artists/activists through various programs on campus and the community in order to facilitate the planning and carrying out of artistic production. Subsequently, students will interact with children in Cleveland schools in conjunction with these artists giving master classes, and be exposed to art exhibits abroad through videoconferencing with the Algerian Cultural Center in Paris and locally through University Circle Institutions. Offered as WGST 301 and ETHS 301.

ETHS 304. Representations of Black Women and Religion in Film. 3 Units.
In this course we will explore cinematic representations of black women and religion in film. Each week we will view a film in class. We will begin the class with the film Imitation of Life and then the course with The Help. Throughout the course we will analyze the ways in which notions of gender, sexuality, intimate violence, and modern notions of race and color, have informed representations of black women and religion in film. In addition, we will discuss how these representations, in turn, have influenced cultural ideas about black women in the Americas. Offered as RLGN 304, RLGN 404, WGST 304, and ETHS 304.

ETHS 306. The Cuban Experience: an immersion in its culture and society. 3 Units.
This is a three week study-abroad intensive course that takes place at Editorial Vigia, in Matanzas, Cuba. The course combines the unique advantages of a total immersion environment in Spanish with a classroom curriculum that includes conversation practice and study of relevant cultural, literary and historical issues. Students complete three hours of classroom instruction and an hour and a half of publishing workshop four days per week. In this workshop, they work in the edition of a bilingual book. In addition, they participate in organized visits to historic sites and museums connected to the culture curriculum. The focus of the culture curriculum is the study of Cuban history and culture through its literature, visual arts, films, and music. After applying and being accepted in the program, students meet for personal advising with the program director and attend four different one hour orientation-information meetings in the spring semester. After successful completion of the study-abroad program, students receive 3 upper-level credits in Spanish. The course is interdisciplinary in approach and provides students with the tools they need to analyze and understand the complexities of modern Cuba. Students will have formal classes taught by their professor and talks and meetings with specialists on Cuban literature, art, architecture, history and other aspects of culture and society. In addition, they will attend lectures, participate in discussions, and take field trips that will expose them to many aspects of Cuban culture, such as art, architecture, music, dance, film, literature, artisan work, folklore, history and urban growth. Offered as SPAN 306, SPAN 406, and ETHS 306. Prereq: SPAN 202.
ETHS 311. Representations of Black Religion in Film. 3 Units.
In this course we will explore cinematic representations of black religion in the Americas and the Caribbean. Each week we will view a film representing diverse religious traditions such as Christianity, Candomble, Santeria, Vodou, and Islam. Films will include Cabin in the Sky, The Color Purple, Black Orpheus, The Serpent and the Rainbow, Malcolm X, Eve's Bayou, and The Princess and the Frog. Throughout the course we will analyze the ways in which notions of gender, the history of colonialism, modern notions of race, and geographical landscapes have informed representations of black religion in film. In addition, we will discuss how these representations, in turn, have influenced cultural ideas of black religion in the Americas. Offered as RLGN 311, ETHS 311, and RLGN 411. Prereq: RLGN 222 or ETHS 251 or ENGL 367 or by permission of Instructor.

ETHS 314. Cultures of the United States. 3 Units.
This course considers the rich ethnic diversity of the U.S. from the perspective of social/cultural anthropology. Conquest, immigration, problems of conflicts and accommodation, and the character of the diverse regional and ethnic cultures are considered as are forms of racism, discrimination, and their consequences. Groups of interest include various Latin/o and Native peoples, African-American groups, and specific ethnic groups of Pacific, Mediterranean, European, Asian, and Caribbean origin. Offered as ANTH 314, ETHS 314, and ANTH 414.

ETHS 316. African Political Thought. 3 Units.
Introduction to select themes in the work of contemporary African philosophers, with special emphasis on political thought. In this course, students will learn something about factors affecting the creation and flow of knowledge and ideas about Africa and discuss the relative importance of the "nation-state" as an idea in Europe, pre-colonial Africa, and postcolonial Africa. Offered as PHIL 316/416 and ETHS 316/416.

ETHS 318. History of Black Women in the U.S.. 3 Units.
Chronologically arranged around specific issues in black women's history organizations, participation in community and political movements, labor experiences, and expressive culture. The course will use a variety of materials, including autobiography, literature, music, and film. Offered as ETHS 318, HSTY 318, and WGST 318.

ETHS 325. Hispanic Intellectuals and Society: A Critical Approach. 3 Units.
This course offers an overview of the most important critical approaches to Spanish American culture and literature, with a socio-historical emphasis. Some of the authors we will discuss are Angel Rama, Jose Antonio Cornejo Polar and Nestor Garcia Canclini. We will analyze how the Latin American intellectuals had thought about specific issues such as identity, race, ideology, colonial and post-colonial relations with the metropolis and the process of formation of the nations in the continent. The class, the discussions, exams, oral presentations and papers will be in Spanish. Some of the readings must be in English, but most of them will be in Spanish. Offered as SPAN 325, SPAN 425, ETHS 325, WLIT 325 and WLIT 425.

ETHS 333. Contemporary Caribbean Literature. 3 Units.
In addition to developing a general familiarity with the literature and history of this region, students will acquire an awareness of the interrelation of national identity, memory, and language in the texts produced by contemporary Caribbean authors, and of the cultural hybridity characteristic of this production. The themes treated by these authors include colonialism and postcolonialism, cultural and religious syncretism, and sexual politics. Offered as SPAN 333, SPAN 433, ETHS 333, WLIT 333 and WLIT 433.

ETHS 335. Women in Developing Countries. 3 Units.
This course will feature case studies, theory, and literature of current issues concerning women in developing countries primarily of the French-speaking world. Discussion and research topics include matriarchal traditions and FGM in Africa, the Tunisian feminist movement, women, Islam, and tradition in the Middle East, women-centered power structures in India (Kerala, Pondichery), and poverty and women in Vietnam, Laos, and Cambodia. Guest speakers and special projects are important elements of the course. Seminar-style format, taught in English, with some significant disciplinary writing in English for WGST, ETHS, and some WLIT students, and writing in French for FRCH and WLIT students. Writing assignments include two shorter essays and a substantial research paper. Offered as ETHS 335, FRCH 335, WLIT 335, WGST 335, FRCH 435 and WLIT 435. Counts as SAGES Departmental Seminar.

ETHS 337. Women in the Arab World. 3 Units.
The purpose of this course is twofold: It is a course that allows students an in-depth look at the diverse women who represent a number of cultures in the Arab world in nations from the Mashrek to the Maghreb. The second primary goal of the course is to study such women through the eyes of leading Arab women theorists who have made an impact not only in their own countries, but also on disciplines intersecting with women's studies worldwide. We will study the Arab woman's place in her respective society, in political and economic systems, in education, and in the family. We will also analyze her contributions to art and literature as well as to the sciences. The course will provide an overview of the Arab woman throughout history, from her origins to her place within recent movements within the Arab Spring and other current world events. As Arab women are Muslim, Christian, and Jewish, views of women within these major world religions will also be taken into account as we study the Arab woman as well as religion's impact on culture in the Middle East and in the Maghreb in particular. In the course, we will utilize theoretical texts, but also case studies as well as examples from media and the arts. During the semester, we will take advantage of teleconferencing opportunities between CWRU and two major academic units for Women's Studies in the Arab world: The Institute for Women's Studies in the Arab World (IWSAW) in Beirut, Lebanon, and the University of Jordan's Center for Women's Studies in Amman. Offered as FRCH 337, FRCH 437, ARAB 337, ETHS 337 and WGST 337.

ETHS 338. The Cameroon Experience. 3 Units.
Three-week immersion learning experience living and studying in Cameroon. The focus of the course is the culture, literature, and language of Francophone Cameroon, with some emphasis on Anglophone Cameroon. Students spend a minimum of fifteen hours per week visiting cultural sites and attending arranged courses at the University of Buea. Students will prepare a research paper. Coursework is in French. To do coursework in English, students should enroll in WLIT 338/438 or ETHS 338/438. Offered as ETHS 338, FRCH 338, WLIT 338, ETHS 438, FRCH 438, and WLIT 438.

ETHS 339. Black Women and Religion. 3 Units.
This course is an exploration of the multidimensional religious experiences of black women in the United States. These experiences will be examined within particular historical periods and across diverse social and cultural contexts. Course topics and themes include black women and slave religion, spirituality and folk beliefs, religion and feminist/ womanist discourse, perspectives on institutional roles, religion and activism, and spirituality and the arts. Offered as: ETHS 339 and RLGN 338 and WGST 339.
ETHS 340. A History of Workers in the United States. 3 Units.
This course examines the experience of working people in the United States with an emphasis on twentieth-century social movements. It explores the lives of the women and men, skilled and unskilled, and rural and urban laborers that produce the goods and provide the services that society consumes. At crucial moments, working people have created or helped sustain national social movements in an effort to improve some aspect of their lives. We therefore will assess laborers in relation to several known and less known American social movements, such as the eight-hour day movement during the late nineteenth century, the peace movement during WWI, and the Civil Rights movement in the wake of WWII. Throughout the course we will also discuss the politics of time-managed work; the influence of public policy and government institutions; the role of unions within a competitive market economy; the relationship between industrial economies and functional blue-collar communities; and the correlation between immigration and globalization. Offered as HSTY 340, HSTY 430, and ETHS 340. Counts as SAGES Departmental Seminar.

ETHS 342. Latin American Feminist Voices. 3 Units.
Examination of the awakening of feminine and feminist consciousness in the literary production of Latin American women writers, particularly from the 1920s to the present. Close attention paid to the dominant themes of love and dependency; imagination as evasion; alienation and rebellion; sexuality and power; the search for identity and the self-preservation of subjectivity. Readings include prose, poetry, and dramatic texts of female Latin American writers contributing to the emerging of feminist ideologies and the mapping of feminist identities. Offered as SPAN 342, SPAN 442, ETHS 342, WGST 342, WLIT 342, and WLIT 442.

ETHS 343. The New Drama in Latin America. 3 Units.
Representative works of contemporary Latin American drama. Critical examination of selected dramatic works of twentieth-century Latin America provides students insight into the nature of drama and into the structural and stylistic strategies utilized by Latin American dramatists to create the "new theater," one which is closely related to Latin American political history. Offered as SPAN 343, SPAN 434, ETHS 343, WLIT 343 and WLIT 434.

ETHS 349. The Arab World Experience. 3 Units.
Taught and led by Case faculty, The Arab World Experience is a spring semester course with a spring break study abroad component in a Middle Eastern or North African country supplemented by course meetings before and after travel. It will rotate among countries such as Jordan, Lebanon, Morocco, etc. and be taught by faculty with appropriate area expertise in Arabic, Women's and Gender Studies, and/or Ethnic Studies. The course focuses on topics such as history, politics, culture, and gender relations within the society of study. Workload and learning outcomes are commensurate with a semester-long three credit hour course. Guest lectures in the host country are an important component of the course as they bring a fresh, authentic perspective to the aforementioned topics discussed. There will be three three-hour meetings prior to travel, required reading, and one three-hour meeting after travel. In the host country, students will spend seven days (five-eight hours per day) in seminars, discussions, and site visits. Student grades are determined on the basis of participation, attendance, a daily experiential learning journal, interviews with guest speakers, and a final exam. Offered as ARAB 349, ETHS 349 and WGST 349.

ETHS 352. African Feminisms. 3 Units.
This course traces the history of African feminism from its origins within traditions through to a more contemporary theoretical analysis of gender, marriage, and motherhood seen from a Afrocentric perspective. Approaches studied are those that pertain to anthropology, history, literature, sociology, and culture. African feminist theory of scholars such as Filomina Steady, Cheikh Anta Diop, Buchi Emecheta, Iyi Amadiamu, Obioma Nnamela, Oyeronko Oyewumi, and Calixthe Beyala will be studied and there will be some comparative analysis of Western theories to show how African feminisms are clearly distinct. Theories on these feminisms will be presented, and in the process, students will look at cases of women in Cameroon, Nigeria, Ghana, Kenya, and Senegal. It is commonly believed that African women were defined for a long time according to constructs of Western anthropology. This course will thus look at social institutions such as woman-to-woman marriage, matriarchy, and various women's rituals in order to identify African constructs of gender, family, kinship, marriage, and motherhood. Offered as ETHS 352 and WGST 352.

ETHS 356. Afro-Hispanic Literature. 3 Units.
This course will survey the literary and cultural production of writers and artists of African descent in Latin America and the Caribbean, paying attention to both their creative and theoretical texts. Discussion of questions of race and ethnicity will allow students to explore the ways in which these texts reformulate the idea of national identity and cultural belonging in the context of the nation-state, whose traditional centrality is being weakened through the effects of migration and exile. Readings include works by writers from Cuba, Puerto Rico, Dominican Republic, Costa Rica, Colombia, Panama, Ecuador, and Peru. Offered as SPAN 356, SPAN 456, ETHS 356, WLIT 356 and WLIT 456.

ETHS 358. Latin American Cinema. 3 Units.
This course is designed to introduce students to the basic tools of film analysis as well as to the major trends and movements in Latin American cinema from the 1960s to the present. Through the analysis of representative films from Latin America, the course will examine the development of a variety of cinematic styles, paying particular attention to the historical contexts in which the films were produced and to the political, cultural, and aesthetic debates that surrounded their production. Offered as SPAN 358, SPAN 458, ETHS 358, WLIT 358 and WLIT 458.

ETHS 362. Politics of Central Asia. 3 Units.
Once an unfamiliar region to many people of the world, Central Asia took center stage in the fall of 2001 as a result of the U.S. campaign against terrorism. This course will introduce students to the politics of Central Asia, focusing on the region today composed of Uzbekistan, Turkmenistan, Tajikistan, Kyrgyzstan, and Kazakhstan. We will review the nationalism, foreign relations, religion, ethnicity, and economics of the region. Offered as ETHS 362, POSC 362, and POSC 462.

ETHS 363H. African-American Literature. 3 Units.
A historical approach to African-American literature. Such writers as Wheatley, Equiano, Douglass, Jacobs, DuBois, Hurston, Hughes, Wright, Baldwin, Ellison, Morrison. Topics covered may include slave narratives, African-American autobiography, the Harlem Renaissance, the Black Aesthetic, literature of protest and assimilation. Maximum 6 credits. Offered as ENGL 363H, ETHS 363H, WLIT 363H, ENGL 463H, and WLIT 463H. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSY, FSTS, or FSCS.
ETHS 364. Dictatorship and Democracy in Modern Latin America. 3 Units.
Examination of political leadership in 20th-century Latin America, exploring the nature, causes, and consequences of dictatorship and democracy in the region, moving from the collapse of oligarchic rule and the emergence of populism in the 1930s and 1940s, to the end of democracy and establishment of military regimes in the 1960s and 1970s, and ultimately to the contemporary processes of democratization and economic liberalization. Offered as ETHS 364, POSC 364, and POSC 464.

ETHS 365N. Topics in African-American Literature. 3 Units.
Selected topics and writers from nineteenth, twentieth, and twenty-first century African-American literature. May focus on a genre, a single author or a group of authors, a theme or themes. Maximum 6 credits. Offered as ENGL 365N, ETHS 365N, WLIT 365N, ENGL 465N, and WLIT 465N. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

ETHS 365Q. Post-Colonial Literature. 3 Units.
Readings in national and regional literatures from former European colonies such as Australia and African countries. Maximum 6 credits. Offered as ENGL 365Q, ETHS 365Q, WLIT 365Q, ENGL 465Q, and WLIT 465Q. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

ETHS 366. Government and Politics of Africa. 3 Units.
Comparative analysis of the political forces and organizations currently functioning in Africa, as well as a survey of the formal government institutions. Special emphasis on single-party rule, military rule, and the political ramifications of African socialism, tribalism and the problems of national integration. Offered as ETHS 366, POSC 366, and POSC 466.

ETHS 369. Ethnicity, Gender, and Religion in Latin American Politics and Society. 3 Units.
This course focuses on aspects of Latin America's social and political realities and dilemmas. It will first explore race, gender, and religion, and then tackle revolution, democracy and populism. Throughout, the entire region's history, geography, and culture(s) will be considered; for example, the European and indigenous legacies in Mexico and Peru, Bolivia, Chile, and Ecuador; the Asian presence in Peru and Brazil; the African contributions to Cuba and Brazil, female heads of state, such as Nicaragua's Violeta Chamorro, Chile's Michelle Bachelet, Argentina's Cristina Fernandez de Kirchner, Costa Rica's Laura Chinchilla, and Brazil's Dilma Rousseff. The class will explore Liberation Theology and the new Pope's worries about the declining number of Catholics in the region. Today's multiparty democracy in Mexico, Hugo Chavez's 14-year rule in Venezuela, and Cuba's international humanitarian aid would not be possible without revolution(s) and populism. They are intertwined with ethnicity, gender, and religion. Offered as ETHS 369, POSC 369 and POSC 469.

ETHS 370K. Nationalism, Ethnicity, and Religion in World Politics. 3 Units.
Examination of the post-Cold War surge in conflicts among nationalisms, ethnic groups, and religions with particular attention to the former Yugoslavia, Ireland, India, Africa, and the Middle East. Offered as ETHS 370K, POSC 370K, and POSC 470K.

ETHS 374. Politics of Development in the Global South. 3 Units.
Exploration of the post-World War II emergence of the Global South nations of Africa, Asia, the Middle East, Latin America, and the Eastern Europe arena. Offered as ETHS 374, POSC 374, and POSC 474.

ETHS 385. Hispanic Literature in Translation. 3 Units.
Critical analysis and appreciation of representative literary masterpieces from Spain and Latin America, and by Hispanics living in the U.S. Texts cover a variety of genres and a range of literary periods, from works by Cervantes to those of Gabriel Garcia Marquez. The course will examine the relationship between literature and other forms of artistic production, as well as the development of the Hispanic literary text within the context of historical events and cultural production of the period. Counts toward Spanish major only as related course. No knowledge of Spanish required. Offered as ETHS 385, ETHS 485, SPAN 385, SPAN 485, WLIT 385, and WLIT 485.

ETHS 391. Advanced Readings in Black History. 3 Units.
This is an advanced readings course that may change from semester to semester. This course will provide students with an opportunity to more deeply explore special themes and theoretical issues in the field of black history that are often quickly and briefly covered in broad survey courses. Readings may be organized around specific topics such as resistance and social protest, black intellectual history, black nationalism and identity, black film and historical literacy black cultural forms and politics, black urban history, or some such other combination. Students may take this course more than once and receive credit as long as the course topic differs. Students should contact the History Department for more details on course content during any given semester. Offered as ETHS 391, HSTY 399 and HSTY 499.

ETHS 393. Advanced Readings in the History of Race. 3 Units.
This course examines the concept of race as a social construction that carries political and economic implications. We begin by examining the histories of the early racial taxonomists (e.g., Bernier, Linnaeus, and Blumenbach among others) and the contexts that informed their writings. We then assess how the concept of race changed from the nineteenth to the twentieth century in the United States. We conclude by evaluating how the ideology of race has influenced U.S. domestic life and foreign policy at specific historical moments. Offered as HSTY 393, HSTY 493, and ETHS 393.

ETHS 394. The Subaltern and The Poetics of War in Africa. 3 Units.
This course is a seminar on major war writers and filmmakers in Africa such as Chinua Achebe, Ngugi wa Thiongo, Emmanuel Dongola, Iweala Uzodinma, Ismael Beah, Sembene Ousmane, Ingrid Sinclair etc. Students will be asked to use postcolonial theory to critically read and view films and texts on war in Africa. They will engage in discussion with guest scholars in the field of African studies. In addition to a final research paper, students are also required to write short papers on selected books and films read and/or viewed during the semester.

ETHS 399. Independent Study. 0 - 3 Units.
This course focuses on topics in ethnicity. In consultation with the program director and instructors, students pick topics in their concentrations and make a list of books and/films for personal and intensive reading. Some of these projects might be Arts and Identity in post-independent Africa [African Concentration], films, literatures and human rights in Latin America [Latin America and Caribbean Concentration], civil rights through music and songs [African-American Concentration] etc. Travel may be a component of this course depending on the nature of the students' interests. Weekly reports are required for the instructors to measure the students' progress.
ETHS 416. African Political Thought. 3 Units.
Introduction to select themes in the work of contemporary African philosophers, with special emphasis on political thought. In this course, students will learn something about factors affecting the creation and flow of knowledge and ideas about Africa and discuss the relative importance of the “nation-state” as an idea in Europe, pre-colonial Africa, and postcolonial Africa. Offered as PHIL 316/416 and ETHS 316/416.

ETHS 438. The Cameroon Experience. 3 Units.
Three-week immersion learning experience living and studying in Cameroon. The focus of the course is the culture, literature, and language of Francophone Cameroon, with some emphasis on Anglophone Cameroon. Students spend a minimum of fifteen hours per week visiting cultural sites and attending arranged courses at the University of Buea. Students will prepare a research paper. Coursework is in French. To do coursework in English, students should enroll in WLIT 338/438 or ETHS 338/438. Offered as ETHS 338, FRCH 338, WLIT 338, ETHS 438, FRCH 438, and WLIT 438.

ETHS 485. Hispanic Literature in Translation. 3 Units.
Critical analysis and appreciation of representative literary masterpieces from Spain and Latin America, and by Hispanics living in the U.S. Texts cover a variety of genres and a range of literary periods, from works by Cervantes to those of Gabriel Garcia Marquez. The course will examine the relationship between literature and other forms of artistic production, as well as the development of the Hispanic literary text within the context of historical events and cultural production of the period. Counts toward Spanish major only as related course. No knowledge of Spanish required. Offered as ETHS 385, ETHS 485, SPAN 385, SPAN 485, WLIT 385, and WLIT 485.

Evolutionary Biology Program

The Evolutionary Biology Program is designed to provide students with knowledge of macro- and micro-evolutionary processes underlying the evolution and diversification of life on Earth and an understanding of the meta-scientific issues involved in this unique field of study.

The program includes grounding in the history and philosophy of evolutionary thought and alternative conceptualizations of the mechanisms, patterns, and processes of evolution. It emphasizes evolutionary theory, foundations of ecology and genetics, focused study of particular organisms or groups of organisms, and the dynamics of evolutionary principles in scientific inquiry.

Undergraduate Programs

Major

Evolutionary biology is a second major, to be pursued in conjunction with a conventional disciplinary major. Up to 12 credits in required and elective courses taken by students for their first major may be applied to their evolutionary biology major.

The 30-credit interdisciplinary major in evolutionary biology consists of:

1. Three foundation courses
2. One course in ecology
3. One course in the philosophy/history of science
4. Four approved electives

The approved electives may include additional philosophy/history of science courses from the list below. In consultation with a major advisor, students will tailor intensive study to suit particular interests within the major.

Required courses:

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<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BIOL 251</td>
<td>Introduction to Organismal and Population Systems</td>
<td>3</td>
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<tr>
<td>or BIOL 214</td>
<td>Genes, Evolution and Ecology</td>
<td>3</td>
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<tr>
<td>EEPS 210</td>
<td>Historical Geology/Paleontology</td>
<td>3</td>
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<tr>
<td>PHIL/ANTH/ BIOL/EEPS/ HSTY 225</td>
<td>Evolution</td>
<td>3</td>
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Additional required courses (one from each area)

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<tr>
<th>Area</th>
<th>Courses</th>
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<tbody>
<tr>
<td>Ecology</td>
<td>BIOL 216 Development and Physiology</td>
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<tr>
<td>Philosophy/History of Science</td>
<td>BIOL 336 Aquatic Biology</td>
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<td>BIOL 351 Principles of Ecology</td>
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<td>HSTY 201 Science in Western Thought I</td>
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<td>HSTY 202 Science in Western Thought II</td>
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<td>HSTY 402 Introduction to Historiography of Science</td>
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<td>PHIL 203 Natural Philosophy I</td>
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<td>PHIL 303 Topics in Philosophy of Science</td>
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Approved electives

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<th>Course</th>
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<tr>
<td>ANTH 103</td>
<td>Introduction to Human Evolution</td>
<td>3</td>
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<td>ANTH 302</td>
<td>Darwinian Medicine</td>
<td>3</td>
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<tr>
<td>ANTH 370</td>
<td>Field Seminar in Paleoanthropology</td>
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<td>ANTH 375</td>
<td>Human Evolution: The Fossil Evidence</td>
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<td>ANTH 377</td>
<td>Human Osteology</td>
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<tr>
<td>ANTH 378</td>
<td>Reproductive Health: An Evolutionary Perspective</td>
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<tr>
<td>BIOL 214L</td>
<td>Genes, Evolution and Ecology Lab</td>
<td>3</td>
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<tr>
<td>BIOL 216L</td>
<td>Development and Physiology Lab</td>
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<tr>
<td>BIOL 223</td>
<td>Vertebrate Biology</td>
<td>3</td>
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<tr>
<td>BIOL 305</td>
<td>Herpetology</td>
<td>3</td>
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<tr>
<td>BIOL 318</td>
<td>Introductory Entomology</td>
<td>3</td>
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<tr>
<td>BIOL 326</td>
<td>Genetics</td>
<td>3</td>
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<td>BIOL 328</td>
<td>Plant Genomics and Proteomics</td>
<td>3</td>
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<td>BIOL 339</td>
<td>Aquatic Biology Laboratory</td>
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<td>BIOL 343</td>
<td>Microbiology</td>
<td>3</td>
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<tr>
<td>BIOL 345</td>
<td>Mammal Diversity and Evolution</td>
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<td>BIOL 351L</td>
<td>Principles of Ecology Laboratory</td>
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<td>BIOL 358</td>
<td>Animal Behavior</td>
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<td>BIOL 359</td>
<td>Genetic Basis of Behavior</td>
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<td>BIOL 362</td>
<td>Principles of Developmental Biology</td>
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<td>BIOL 363</td>
<td>Experimental Developmental Biology</td>
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<td>BIOL 364</td>
<td>Research Methods in Evolutionary Biology</td>
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<td>BIOL 365</td>
<td>Evo-Devo: Evolution of Body Plans</td>
<td>3</td>
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<tr>
<td>BIOL/ANTH/ EEPS/HSTY/ PHIL 394</td>
<td>Seminar in Evolutionary Biology</td>
<td>3</td>
</tr>
<tr>
<td>EEPS 301</td>
<td>Stratigraphy and Sedimentation</td>
<td>3</td>
</tr>
<tr>
<td>EEPS/BIOL 307</td>
<td>Evolutionary Biology and Paleobiology of Invertebrates</td>
<td>3</td>
</tr>
<tr>
<td>PSCL 350</td>
<td>Behavior Genetics</td>
<td>3</td>
</tr>
<tr>
<td>STAT 201</td>
<td>Basic Statistics for Social and Life Sciences</td>
<td>3</td>
</tr>
</tbody>
</table>

Table:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT 201</td>
<td>Basic Statistics for Social and Life Sciences</td>
<td>3</td>
</tr>
</tbody>
</table>
Minor

The 15-credit interdisciplinary minor consists of three foundation courses and two approved electives. In consultation with a minor advisor, students will tailor intensive study to suit their particular interests.

Required courses:
- BIOL 251 Introduction to Organismal and Population Systems 3
  or BIOL 214 Genes, Evolution and Ecology 3
- BIOL/ANTH/EEPS/HSTY/PHIL 225 Evolution 3
- EEPS 210 Historical Geology/Paleontology 3
- Two approved electives selected in consultation with advisor 6

Total Units 15

Program Faculty

Patricia Princehouse, PhD
Senior Research Associate, Department of History; Director, Evolutionary Biology Program

Radhika Atit, PhD
Associate Professor, Department of Biology

Cynthia M. Beall, PhD
Distinguished University Professor and Sarah Idell Pyle Professor of Anthropology, Department of Anthropology

Michael Benard, PhD
Associate Professor, Department of Biology

Darin Croft, PhD
Associate Professor, Department of Anatomy, School of Medicine

Yohannes Haile-Selassie Ambaye, PhD
Adjunct Professor, Department of Anthropology; Curator and Head of Physical Anthropology, Cleveland Museum of Natural History

Emmitt Jolly, PhD
Associate Professor, Department of Biology

Bruce Latimer, PhD
Adjunct Professor of Anthropology; Adjunct Associate Professor, Department of Anatomy, School of Medicine

Peter McCall, JD, PhD
Professor, Department of Earth, Environmental, and Planetary Sciences

Scott Simpson, PhD
Associate Professor, Department of Anatomy, School of Medicine

Mark Willis, PhD
Professor, Department of Biology

Peter A. Zimmerman, PhD
Professor, Center for Global Health and Diseases, School of Medicine

French and Francophone Studies Program

Designed to develop cross-cultural awareness and to foster international understanding, the French and Francophone Studies (FFS) Program adds an exciting dimension to the traditional liberal arts curriculum. The French and Francophone Studies major differs from the traditional French major in two respects: its interdisciplinary nature and its greater flexibility in accommodating students’ areas of interest. The FFS major answers the needs of students with a strong interest in cultural issues in general and in French and Francophone history and society in particular. By allowing students to take course work in English, the FFS major allows them to profit from the many courses in various departments that focus on France and the Francophone world.

The FFS Program is an interdisciplinary, integrated program that understands the term “French” in its broadest sense. It thus reflects the diversity of the field of French studies, which explores varied cultures of Francophone expression: Canada, the Caribbean, North and West Africa, the Middle East, and Southeast Asia. Reaching beyond disciplinary and national boundaries, the program encourages students to choose from a large selection of courses in the humanities, the arts, and the social sciences. In this way, it provides both a meaningful course of study and an outstanding preparation for graduate or professional schools and for careers in international business and finance, law, journalism, diplomatic service, nonprofit and other international organizations, health, teaching, or the arts.

Major (p. 160) | Study Abroad (p. 162) | Minor (p. 162)

Undergraduate Programs

Major

Each student prepares a program of study in close consultation with a faculty advisor drawn from the advisory committee. Students should also discuss their choice of a minor or a second major with their advisor.

French and Francophone Studies (FFS) majors should demonstrate French language ability by completing French 201-202 or the equivalent. They will also take at least one 300-level FRCH course (see Foundations in Culture courses below).

The major in French and Francophone Studies requires a minimum of 33 credit hours in the following areas:

1. Foundations in Language (8 hours)

For students entering at the 200-level of French language:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRCH 201</td>
<td>Intermediate French I</td>
<td>4</td>
</tr>
<tr>
<td>FRCH 202</td>
<td>Intermediate French II</td>
<td>4</td>
</tr>
</tbody>
</table>

Students entering at the 300-level of language study complete 21 credits in Electives section below.

Total Units 8
2. Foundations in Culture: Introduction to French and Francophone cultures (9 hours)

FRCH/WLIT 295 The Francophone World 3

Two of the following: 6

FRCH 316 Contemporary France
FRCH 318 The Origins of France
FRCH 319 Modern France
HSTY 310 The French Revolutionary Era

Total Units 9

3. Electives: Related Courses in French and Other Disciplines (15-21 hours)

Students select from courses that focus on French and Francophone cultures in FRCH and other disciplines (art history, political science, history, etc.). These are chosen from the approved list (see below) and in conjunction with a program advisor. No more than 9 of these credits may be chosen from FRCH courses.

Anthropology

ANTH 399 Independent Study 1 - 6

Art History

ARTH 260 Art in Early Modern Europe 3
ARTH 280 Modern Art and Modern Science 3
ARTH 284 History of Photography 3
ARTH 340 Issues in the Art of China 3
ARTH 374 Impressionism to Symbolism 3
ARTH 379 Issues in 19th Century Art 3
ARTH 392 Issues in 20th/21st Century Art 3
ARTH 398 Independent Study in Art History 1 - 3

Economics

ECON 372 International Finance 3
ECON 373 International Trade 3
ECON 375 Economics of Developing Countries 3

English

ENGL/WLIT 290 Masterpieces of Continental Fiction 3
ENGL 301 Linguistic Analysis 3
ENGL 368C Topics in Film Capstone 3
ENGL 379 Topics in Language Studies 3
ENGL/WLIT 387 Literary and Critical Theory 3

History

HSTY 151 Technology in European Civilization 3
HSTY 201 Science in Western Thought I 6
& HSTY 202 and Science in Western Thought II
HSTY 212 Modern European History 3
HSTY 215 Europe in the 20th Century 3
HSTY 234 France and Islam 3
HSTY 250 Issues and Methods in History 3
HSTY 309/RLGN Reformation Europe, 1500-1650 3
374

HSTY 310 The French Revolutionary Era 3
HSTY/RLGN 315 Heresy and Dissidence in the Middle Ages 3
HSTY 332 European International Relations 1789-1945 3
HSTY/POSC 348 History of Modern Political and Social Thought 3
HSTY 397 Undergraduate Tutorial 1 - 3

International Studies

INTL 396 International Independent Study 1 - 3

Music

MUHI 301 History of Western Music I 3
MUHI 302 History of Western Music II 3
MUHI 303 History of Western Music III 3

Philosophy

PHIL 302 Modern Philosophy 3
PHIL 315 Selected Topics in Philosophy 3
PHIL 325 Philosophy of Feminism 3
PHIL 399 Directed Study 3

Political Science

POSC 326 Constitutions in Practical Politics 3
POSC/HSTY 348 History of Modern Political and Social Thought 3
POSC 351 Modern Political Thought 3
POSC 366 Government and Politics of Africa 3
POSC 367 Western European Political Systems 3
POSC 370A Political Economy 3
POSC 373 Politics of the European Union 3
POSC 374 Politics of Development in the Global South 3
POSC 395 Special Projects 1 - 6

Religious Studies

RLGN/HSTY 315 Heresy and Dissidence in the Middle Ages 3
RLGN 374/HSTY 309 Reformation Europe, 1500-1650 3
RLGN 392 Independent Study 1 - 3

Theater

THTR/WLIT 229 Development of Theater: Renaissance to Romanticism 3
THTR 329 Modern and Contemporary Drama 3
THTR 399 Independent Study in Theater Arts 1 - 3

World Literature

WLIT 211 World Literature I 3
WLIT 212 World Literature II 3
WLIT/THTR 229 Development of Theater: Renaissance to Romanticism 3
WLIT/ENGL 290 Masterpieces of Continental Fiction 3
WLIT 300 The City in Literature 3
WLIT 390 Topics in World Literature 3
Courses offered in a given semester with a French and Francophone Studies component are posted in Guilford House at registration time and on the French and Francophone Studies (http://www.case.edu/artsci/fr_studies) website.

Study Abroad

Study abroad in France, Belgium, Switzerland, French Canada, the Francophone Caribbean, or a Francophone African or Middle Eastern country is strongly encouraged but not required for FFS majors. The Department of Modern Languages and Literatures offers a summer study abroad program in Paris (FRCH 308 The Paris Experience / WLIT 308 The Paris Experience) in even-numbered years. A summer study abroad program in Cameroon (FRCH 308 The Paris Experience / WLIT 308 The Paris Experience / ETHS 338 The Cameroon Experience) is offered in odd-numbered years. FRCH 208 The Montreal Experience is a spring break service-learning excursion to Montreal.

Minor

The minor requires 15-17 credits. Students entering at the 200 level of language competence take:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRCH 201</td>
<td>Intermediate French I</td>
<td>4</td>
</tr>
<tr>
<td>FRCH 202</td>
<td>Intermediate French II</td>
<td>4</td>
</tr>
<tr>
<td>Three courses in FRCH from the approved list</td>
<td>9</td>
<td></td>
</tr>
</tbody>
</table>

Total Units: 17

At least 6 credits should be taken in disciplines other than FRCH. Students entering at the 300 level of language competence take five courses at the 200 and 300 levels in FRCH and from the approved list. At least 3 credits should be in courses from FRCH taught in the French language, and at least 6 credits should be taken in disciplines other than FRCH.

Program Advisory Committee

Gilbert Doho, PhD
Associate Professor, Department of Modern Languages and Literatures

Laura E. Hengehold, PhD
Associate Professor, Department of Philosophy

Marie Lathers, PhD
Elizabeth M. and William C. Treuhaft Professor of Humanities, Department of Modern Languages and Literatures

Miriam R. Levin, PhD
Professor, Department of History

Cheryl Toman, PhD
Associate Professor, Department of Modern Languages and Literatures

Affiliated faculty

Gillian Weiss, PhD
Associate Professor, Department of History

German Studies Program

In its reconstituted form, Germany has again become a major player in European and global affairs. Germany has always been considered important to European development—at various times it has been called the crossroads of the entire continent—but the economic might of modern Germany and the integration of the European Union have now made American understanding of German culture and civilization more important to—and worthy of study by—American students than at any time since 1945.

German Studies, an integrated program of study leading to the BA degree, offers students the freedom to develop an interdisciplinary sequence of courses to meet their particular needs and interests. It builds the foundation for graduate work in many academic fields that call for a thorough knowledge of German language, culture, and history. It also prepares students for careers in international business or for future study in professional programs such as law and business administration.

German Studies administers a summer immersion program, The Munich Experience, which allows students to spend four weeks in Munich and experience the city’s vibrant culture and breathtaking surroundings. After graduation, many German and German Studies majors (most of whom have a second major in another field) return to Germany to study or work. Our majors have returned to Germany on Fulbright scholarships, through internships administered by the Carl-Duisberg-Gesellschaft, or as interns for the German parliament.

Undergraduate Programs

Major

The major in German Studies, which includes a German language requirement, concentrates on the study of the German cultural tradition in history, philosophy, the fine arts, music, film studies, politics, and culture. The major is particularly suited to students wishing to combine interests in German language and culture with a major in another discipline.

The major requires 30 hours, to be distributed as follows:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRMN 303</td>
<td>German Culture &amp; Civilization</td>
<td>3</td>
</tr>
<tr>
<td>GRMN 311</td>
<td>Advanced Conversation</td>
<td>3</td>
</tr>
<tr>
<td>GRMN 396</td>
<td>Senior Capstone - German (or equivalent)</td>
<td>3</td>
</tr>
</tbody>
</table>

Twenty-one additional hours approved by one of the co-directors, with no more than 9 hours from any one department: 21

Total Units: 30

Possible concentrations for the German Studies major include history and philosophy; German literature and theater history; political science and history; art history; music history; and religious studies. Within the program requirements, students are free to shape the major as they wish, based on their own intellectual interests.

Minor

The course requirements for the minor (15 hours) are as follows:

One of the following: 3

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>GRMN 303</td>
<td>German Culture &amp; Civilization</td>
</tr>
<tr>
<td>GRMN 311</td>
<td>Advanced Conversation</td>
</tr>
</tbody>
</table>

Four additional 300-level courses approved by one of the co-directors: 12

Total Units: 15
Gerontological Studies Program

The Gerontological Studies Program is a multidisciplinary program designed to integrate research and theory from multiple disciplines about aging and the life course. Prompted in part by broad social and technological changes that include the “graying” of the world’s population, humanists, scientists, social scientists, and professionals have become interested in understanding the position of older adults in society, age-related processes in various contexts, and variations in the cultural meaning of age. The program draws on the most recent thinking and research in a variety of disciplines to provide students with a background that will be helpful after graduation, both in work and in graduate or professional school.

In keeping with the interdisciplinary nature of the program, the core courses are drawn from three departments: Anthropology, Psychological Sciences, and Sociology. Students may choose from a variety of courses according to their own interests. Most of the electives are not specifically gerontology courses but cover topics that contribute to the understanding of aging and the life course. The perspectives gained in the core courses will provide the student with the background needed to relate the material in the more general courses to gerontological issues. The program is firmly grounded in the liberal arts and thus provides the student with the challenge to think and communicate effectively and to integrate diverse information, theories, and practice.

Gerontological Studies is an appropriate major or minor for students with a wide variety of career goals. The aging of the population has made available entry-level positions for persons with baccalaureate degrees in organizations that provide services to older people and that formulate policy related to aging and older adults. Many graduate programs now include an emphasis on aging for which a degree in Gerontological Studies would serve as a useful background. Students planning to pursue professional degrees will find that an increasing number of their clients or patients will be older adults and that problems with which they must deal will be related to aging. The perspective provided by participating in the Gerontological Studies Program provides students with excellent background for working with older populations.

Faculty members associated with the program are engaged in a variety of funded research projects. These include studies of Alzheimer’s disease; cancer survivorship; health disparities and cumulative disadvantage over the life course; patterns of care for the elderly; visual perception changes that accompany aging; the impact of high levels of physical activity on the biological aging process; grandparent-grandchild relationships; and stress, coping, and adaptation among urban community and institutionalized elderly.

Minor

Students may also elect a minor in Gerontological Studies. The minor requires a minimum of 15 credit hours, including at least two of the following five courses.

At least two of the following * 6

- COSI 345 Communication and Aging
- PSCL 369 Adult Development and Aging
- SOCI 361 The Life Course
- SOCI 369/469 Aging in American Society

* The remaining nine hours needed to fulfill the minor requirement may consist of any combination of the approved electives and core courses listed for the Gerontological Studies major.

Total Units 15

Graduate Certificate Program in Gerontology

University Center on Aging and Health
1420 Frances Payne Bolton School of Nursing
Phone: 368-2692; Fax: 216-368-6389
Diana L. Morris, PhD, RN, FAAN, FGSA, Executive Director
diana.morris@case.edu

The University Center on Aging and Health (http://fpb.case.edu/Centers/UCAH/program.shtm) is dedicated to the premise that aging is a developmental process spanning the entire life cycle, and brings together social and behavioral sciences, health sciences, and the humanities to encourage teaching and research activities in every unit of the University. The Center sponsors a certificate program in gerontology for graduate and professional students and for those who already hold graduate degrees.

A student interested in a graduate certificate in gerontology must be enrolled in a master’s or doctoral program, or be a special non-degree student with at least a master’s degree (or equivalent). To receive a certificate in gerontology, a student must submit a formal application.
be approved by the University Center on Aging and Health, and take 12 credit hours of course work.

The student must complete the following courses:

1. Two three-credit courses in gerontology within the student’s discipline, one of which can be independent study.
2. One three-credit course in gerontology or independent study outside the student’s discipline.
3. A three-credit seminar in gerontology offered by the center.

Any departures from the requirements must be approved by the center director. For further information, contact the University Center on Aging and Health.

Program Faculty

Eileen Anderson-Fye, EdD (Harvard University)
*Robson Junior Professor, Associate Professor, Department of Anthropology*
Psychological and medical anthropology; culture, gender and human development, anthropology of adolescence; globalization; immigration; mental health; eating and body image disorders

Dale Dannefer, PhD (Rutgers University)
*Selah Chamberlain Professor of Sociology and Chair, Department of Sociology; Co-Director, Gerontological Studies Program*
Aging and the life course; theory; work and family; research methods

Gary T. Deimling, PhD (Bowling Green State University)
*Professor, Department of Sociology; Co-Director, Gerontological Studies Program*
Medical sociology; sociology of aging; family sociology

Atwood Gaines, PhD (University of California), MPH (Berkeley)
*Professor, Department of Anthropology*
Medical and psychiatric anthropology; cultural studies of science and medicine; cultural bioethics; religion; aging and dementia; social identity and health

Brian Gran, PhD (Northwestern University), JD (Indiana University-Bloomington)
*Associate Professor, Department of Sociology*
Sociology of law; comparative sociology; health care policy; human rights

Eva Kahana, PhD (University of Chicago)
*Distinguished University Professor and Pierce T. and Elizabeth D. Robson Professor of the Humanities, Department of Sociology*
Sociology of aging; medical sociology; social factors in stress and coping

Jessica Kelley-Moore, PhD (Purdue University)
*Associate Professor, Department of Sociology*
Health disparities; sociology of disability; sociology of the life course; race/ethnicity

Todd McCallum, PhD (University of Southern California)
*Associate Professor, Department of Psychological Sciences*
Older adults; caregiving; ethnicity; stress and coping

Courses

**GERO 498. Seminar in Gerontological Studies. 3 Units.**
Major themes in gerontology. Seminar members choose a problem area, explore the relevant literature from a multi-disciplinary perspective, and develop a research project using knowledge gained through community observation and library exploration.

**GERO 601. Independent Study. 1 - 3 Unit.**
For students enrolled in the graduate certificate program in gerontology.

Department of History

The Department of History offers comprehensive undergraduate and graduate programs in all fields of history, with particular strengths in American history; the history of science, technology, environment, and medicine; and social history and policy. Historical studies are sometimes categorized among humanistic studies and sometimes among the social sciences. Allied with both traditions, historians seek an understanding of the past by analyzing societies and how they change over time.

The Department of History offers instruction within the customary frameworks that have formed the basis of historical studies, and it also has developed special emphases in social, cultural, political, and economic perspectives that allow instruction and research on such topics as the African-American experience, the environment, business and economy, technology and science, medicine, women’s history and gender studies, legal history, and comparative social history. Courses in history, or a formal major or minor in history, traditionally have been attractive to students as preparation for a wide variety of career and professional interests, including teaching, law, government, and journalism, and such public history activities as archival administration, historical museum administration, restoration and preservation of historic sites, and writing.

Facilities

Case Western Reserve University, the other institutions in University Circle, and the Cleveland area in general offer excellent facilities for historical research. These facilities are especially strong in the fields of social history and policy and in the history of medicine, health care, nonprofit organizations, technology, and science. The university library’s extensive collections in these fields are significantly augmented by the holdings of the nationally ranked Allen Memorial Library in the history of medicine and health care, and of the equally distinguished Western Reserve Historical Society in regional economic, social, nonprofit, ethnic, African-American, and Jewish history. Both the Allen Memorial Library and the Western Reserve Historical Society library are adjacent to the campus. The Cleveland Public Library, just five miles from campus in downtown Cleveland, is the third largest public library in the U.S.; it maintains excellent research collections in Ohio, U.S., and British history, technology, and business. The university has also pioneered the development of electronic connections to other libraries and to research resources in general; Ohio’s many colleges and universities have one of the nation’s leading interlibrary loan programs.

Undergraduate Programs

Major

The history major may be elected in one of two formats: the regular major or the teacher licensure major.
Regular Major
The regular major requires a minimum of 30 hours in history courses, including:

- HSTY 112 Introduction to American History 3
- HSTY 113 Introduction to Modern World History 3
- HSTY 250 Issues and Methods in History 3
- HSTY 398 Senior Research Seminar 3
- Two of the following: 6
  - HSTY 152 Technology in America
  - HSTY 206 Ancient and Medieval Spain: Prehistory to 1492
  - HSTY 255 Economic History of the United States
  - HSTY 256 American Political History
  - HSTY 257 Immigrants in America
  - HSTY 260 U.S. Slavery and Emancipation
  - HSTY 262 African-American History Since 1945
  - HSTY 325 U.S. Politics, Culture, and Society: 1790-1860
  - HSTY 353 Women in American History I
  - HSTY 354 Women in American History II
  - HSTY 355 Age of American Civil War 1815-80
  - HSTY 378 North American Environmental History

The remaining seven electives must include one course in U.S. history, one course in pre-modern history, and one course each in at least two other, different geographical areas. Each course can only fulfill one requirement. These distribution requirements are new and replace the old requirement that each student have a “concentration” of four related courses.

Teacher Licensure Major
The teacher licensure major requires 30 hours of history, including the same four courses required for the regular major and a minimum of six semester hours in each of three focus areas: United States history, world/European studies, and Asian, African, and Latin American studies. Candidates for teacher licensure (Integrated Social Studies, Adolescents and Young Adults) must also take courses in economics, political science, and sociology (9 hours) and 35 hours in education courses, culminating in student teaching. Students interested in pursuing this science, and sociology (9 hours) and 35 hours in education courses, culminating in student teaching. Students interested in pursuing this option should confer with the department’s undergraduate advisor. See the Teacher Licensure (p. 312) section in this bulletin.

Subject area requirements:

- HSTY 112 Introduction to American History 3
- HSTY 113 Introduction to Modern World History 3
- HSTY 250 Issues and Methods in History 3
- HSTY 398 Senior Research Seminar 3
- Two of the following: 6
  - HSTY 152 Technology in America
  - HSTY 206 Ancient and Medieval Spain: Prehistory to 1492
  - HSTY 255 Economic History of the United States
  - HSTY 256 American Political History
  - HSTY 257 Immigrants in America
  - HSTY 260 U.S. Slavery and Emancipation
  - HSTY 262 African-American History Since 1945
  - HSTY 325 U.S. Politics, Culture, and Society: 1790-1860
  - HSTY 353 Women in American History I
  - HSTY 354 Women in American History II
  - HSTY 355 Age of American Civil War 1815-80
  - HSTY 378 North American Environmental History

Total Units: 36

(With advisor approval, the sociology requirement may be met with HSTY 262 African-American History Since 1945 or HSTY 325 U.S. Politics, Culture, and Society: 1790-1860, and the political science requirement may be met with HSTY 256 American Political History.)

Integrated Graduate Studies
The Department of History participates in the Integrated Graduate Studies (IGS) Program (http://bulletin.case.edu/undergraduatestudies/gradprofessional/#accelerationtowardgraduatedegreestext) . Interested students should note the general requirements and procedures of the School of Graduate Studies, but they must also consult the departmental advisor about the specific requirements, guidelines, and opportunities for IGS in history.

Minor
The history minor will consist of five courses (15 credit hours) in history. At least one course must be above the 100-level. Minor advisors will encourage students to take courses across a variety of fields. Elective courses can be chosen from all HSTY courses. The history minor is available to all undergraduate students.

Advanced Placement Credit
Students with Advanced Placement (AP) scores of 5 or better will receive three semester hours of college credit, applicable to the total number of credits required for graduation as well as to any major, minor, or sequence in history. AP credit may not be applied to the HSTY 112 Introduction to American History and HSTY 113 Introduction to Modern World History core courses. Credit by way of AP examination in U.S. history is given for HSTY 256 American Political History or in European history for HSTY 212 Modern European History.

Graduate Programs
The Department of History offers both the MA and the PhD in history. Many, but not all, of our PhD students work within one of the department's two focused PhD programs: (1) Social History and Policy, and (2) History of Science, Technology, Environment and Medicine. In practice, these two programs are often closely related. The department also joins with the Law School to offer an MA/JD dual-degree program. Applicants for graduate degrees in history must submit transcripts from all previous undergraduate, graduate, and professional study; scores on the GRE or a comparable standardized test; three letters of recommendation; application essays; and a writing sample.
Master of Arts

The MA in history requires 27 hours of course work, including 6 hours of carefully supervised work on a master's thesis (a work of original research based on primary sources). For the joint JD/MA program, students must be admitted to both the history graduate program and the law school. They can earn the degree in either three and one-half years or three years and two summers of study, completing a total of 106 hours (including double credits of up to nine hours).

Doctor of Philosophy

Students are admitted into the history department’s graduate programs with or without a master’s or professional degree. Students who do not have a master's degree in history will generally be required to complete that degree in the department before moving on to the PhD; those who have earned graduate or professional degrees closely related to their PhD programs may petition for direct admission to the PhD program. Students who first complete their MA in history at Case Western Reserve must complete an additional 24 hours of course work, pass the qualifying exams required by their program of study, and prepare a PhD dissertation while enrolling in at least 18 hours of supervised dissertation-writing work. Students who have completed their master's-level work before coming to Case Western Reserve must complete at least 24 hours of course work before taking their qualifying exams and proceeding to their dissertation. All PhD students are required to take:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HSTY 470</td>
<td>Historiography, Method, and Theory</td>
<td>3</td>
</tr>
<tr>
<td>HSTY 476</td>
<td>Seminar in Comparative History</td>
<td>3</td>
</tr>
<tr>
<td>HSTY 479</td>
<td>Historical Research and Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

Social History and Policy Program (SHP)

The Social History and Policy Program is designed to prepare students for careers either as analysts and administrators of social policy or as teachers and researchers in colleges and universities. The program defines social policy broadly to include not only welfare, family and juvenile matters, aging, health care, and medicine, but also education, urban history, environmental history, cultural policies regarding museums, libraries and similar agencies, and labor. The program recognizes that social policies are made and put into practice by private, nonprofit organizations and through legal institutions as well as through federal, state, and local legislatures and executives.

Entry into the program does not require an MA in history; several students have been admitted with JD, MSW, library science, or other degrees. However, the program often requires students with limited backgrounds in U.S. history to take extra course work.

More tightly structured than the traditional PhD, the Social History and Policy Program requires 18 hours of course work (and possibly additional hours to prepare for examinations); qualifying examinations in U.S. history and in the history of social policy; a cognate field; and a dissertation. The program also includes an option for the student to complete a policy-related internship. In the past, internships have been conducted with the Cleveland Federation for Community Planning, the Interchurch Council of Greater Cleveland, the Bureau of Jewish Education, the Sisters of Charity of St. Augustine, and the Hathaway Brown School.

History of Science, Technology, Environment and Medicine Program (STEM)

The History of Science, Technology, Environment and Medicine Program was established in 1961 as the first in the nation to emphasize the history of technology as well as the history of science. The program’s areas of particular strength include the social and cultural history of technology, both American and European; technology and science policy; the history of the physical sciences since the Renaissance; gender issues in technology and science; the history of medicine; and the history of the environment. The course of study for the PhD includes the MA requirements, written and oral qualifying examinations, and a dissertation. While most graduates of the program teach at colleges or universities, others work in museums or archives or deal with science policy questions.

General PhD Program

In addition to the specialized SHP and STEM programs, the Department of History also offers a general PhD in history, allowing students to specialize in any geographical, temporal, or topical area of history adequately covered by department faculty. In the past, this general program has been largely restricted to students pursuing topics in U.S. history (including American women's history, African-American history, U.S. cultural history, and the history of social movements), but the gradual expansion of the department now allows us to support PhD work in certain comparative or non-U.S. fields. All prospective graduate applicants are strongly encouraged to examine the research specialties of department faculty before applying to the program.

Department Faculty

Kenneth F. Ledford, PhD, JD
(Johns Hopkins University; University of North Carolina)
Associate Professor and Chair
Modern German history; Modern European history; European legal history; history of the professions

Molly W. Berger, PhD
(Case Western Reserve University)
Instructor; Associate Dean, College of Arts and Sciences
History of technology; U.S. cultural history; nineteenth and twentieth centuries

John Broich, PhD
(Stanford University)
Associate Professor
British history; British Empire; environmental history; history of public health

Daniel Cohen, PhD
(Brandeis University)
Associate Professor
Colonial America; U.S. cultural history

Ananya Dasgupta, PhD
(University of Pennsylvania)
Assistant Professor
History of Modern South Asia; secularism in South Asia; gender and community in South Asia
John H. Flores, PhD
(University of Illinois at Chicago)
Climo Junior Professor; Assistant Professor
Mexican American history; immigration; labor

Jay Howard Geller, PhD
(Yale University)
Samuel Rosenthal Professor of Judaic Studies; Associate Professor
Jewish history, modern European history, modern German history

David C. Hammack, PhD
(Columbia University)
Hiram C. Haydn Professor of History
American social and urban history; economic history; history of civil society and philanthropy

Miriam R. Levin, PhD
(University of Massachusetts, Amherst)
Professor
History of industrial societies and cultures; history of modern France; women in science

Alan Rocke, PhD
(University of Wisconsin, Madison)
Distinguished University Professor and Henry Eldridge Bourne Professor of History
History of science; science, technology, and society

Jonathan Sadowsky, PhD
(Johns Hopkins University)
Theodore J. Castele Professor; Associate Professor
Medical history; African history; comparative history

Renée M. Sentilles, PhD
(College of William and Mary)
Associate Professor
American women's history; U.S. cultural history; American studies; children's studies

Peter Shulman, PhD
(Massachusetts Institute of Technology)
Associate Professor
History of science, technology and American politics; environmental history and the history of energy; United States foreign relations

Theodore L. Steinberg, PhD
(Brandeis University)
Adeline Barry Davee Distinguished Professor of History
U.S. environmental and legal history

Gillian L. Weiss, PhD
(Stanford University)
Associate Professor, and Director of Undergraduate Studies
Early modern France; comparative slavery; the Mediterranean

Rhonda Y. Williams, PhD
(University of Pennsylvania)
Associate Professor; Director, CWRU Social Justice Institute; Director, Postdoctoral Fellowship in African American Studies
African American history; U.S. social history

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**Secondary Faculty**

Rachel Sternberg, PhD
(Bryn Mawr College)
Associate Professor, Department of Classics
Greek language and literature; Greek social history; history of emotion; reception of the classical tradition in the age of Jefferson

**Adjunct Faculty**

Amy Absher, PhD
(University of Washington)
Part-time Lecturer and SAGES Fellow
US Urban history; race & ethnicity in America; American & European cultural & Intellectual history

Virginia Dawson, PhD
(Case Western Reserve University)
Adjunct Associate Professor
History of science and technology

James M. Edmonson, PhD
(University of Delaware)
Adjunct Associate Professor; Director, Dittrick Medical History Center
Medical history

John Grabowski, PhD
(Case Western Reserve University)
Krieger-Mueller Associate Professor of Applied History
United States history; immigration and ethnicity; local history

Gladys Haddad, PhD
(Case Western Reserve University)
Adjunct Professor; Director, Regionally Speaking
American studies; women's education

Bernard Jim, PhD
(Case Western Reserve University)
Part-time Lecturer and SAGES Fellow
19th- and 20th-century US history; American history of science and technology; gender; methodology

Elizabeth Todd, PhD
(The Ohio State University)
Part-time Lecturer
Medieval history; Reformation Europe

John Vacha, MA
(Case Western Reserve University)
Adjunct Assistant Professor; Director, History Day
Theater history
Courses

HSTY 108. Introduction to Early American History. 3 Units.
This course offers an introduction to American history through a thematic survey of colonial British North America and the early United States, from the first permanent English settlements of the early seventeenth century to the onset of the American Civil War. It focuses on (1) the emergence and development of contrasting social systems in the various colonies; (2) the causes and consequences of the American Revolution; and (3) the political, religious, and economic transformations of the period 1790 through 1860. Readings include a mix of primary sources (historical documents) and secondary sources (books and articles written by modern scholars). Students will examine a variety of historical methods and approaches but will particularly explore past social experiences and values through the personal (or autobiographical) writings of individual Americans of varying backgrounds. Particular attention will be paid to the experiences of women and African Americans.

HSTY 110. Introduction to US History for International Students. 3 Units.
This course offers an introduction to U.S. history for international and other students who have not studied U.S. history in secondary school. The course will emphasize topics relevant to understanding how change over the past 250 years has shaped the diversity of the people, the development of the economy, and the government and politics, and the international position of the U.S. as they exist today. Students will read a mix of classic short historical documents, quantitative analyses, and interpretations by historians and social scientists. With respect to the peopling of the U.S. the course will consider the native populations of North America and the movements of people from Europe, Africa, Central America, and Asia, as well as the history of movement and interactions of people within the U.S.: the course will pay particular attention to slavery, segregation, and to changes in American households and families. With respect to economic affairs, the course will consider the history of economic growth, the development of business firms and other key economic institutions, and the question of distribution -- of changes in wealth and poverty. With respect to government and politics, the course will consider the implications of the U.S. Constitution (including its emphasis on the separation of powers, federalism, “republican” values, private property, and the Bill of Rights) for the powers of the federal and state governments; the course will also consider the development and current roles of political parties in the U.S. With respect to international relations, the course will focus on the long-term expansion in U.S. engagement with the rest of the world, and on current challenges to the U.S. position. These topics attract deep and continuous debate; the aim of the course is to introduce students to the best current knowledge, and the most influential debates, about them.

HSTY 112. Introduction to American History. 3 Units.
History of the United States from the first settlements to the present. Emphasis on themes such as political and social revolution, slavery and race relations, industrialism, and national cultures.

HSTY 113. Introduction to Modern World History. 3 Units.
The history of the nineteenth and twentieth centuries in global context. Emphasis on the forces that have created or shaped the modern world: industrialization and technological change; political ideas and movements such as nationalism; European imperialism and decolonization; and the interplay of cultural values.

HSTY 117. Exploring American History Through Biography. 3 Units.
This discussion and lecture class uses various forms of biography to explore issues of American identity throughout the course of American history. The class will discuss how certain biographies have created archetypal American identities, and how issues such as race, class, gender, sexuality, religion, and historical context have shaped the writing, reading and purpose of biography. The last third of the class will consider the process of “national memory,” the way the United States has decide to remember its past. Here the “biography” is collective, and created by myriad strands of mass culture woven together to create a national mythology. We will explore the works of those striving to pull apart these different strands, and explore what these memories tell us about established national identity. Students will explore biographical process through their assignments, and consider such questions as: How do American biographies influence our understanding of what it means to be American? How does biographical medium affect the message? Can we accept biography as history? This course investigates biography as a constructed genre that comes in a variety of forms, including autobiography, biographical novels, oral histories, and film. Offered as AMST 117 and HSTY 117.

HSTY 132. Introduction to Modern East Asia. 3 Units.
HSTY 132 is an introduction to the histories of modern China, Japan, Korea, and Vietnam from the “dawn of the global world” in the 17th century to present. Taken together these regions make up the geographic unit commonly referred to as “East Asia.” Over the course of the term, we will investigate the usefulness of this concept of “East Asia” by examining its origins as well as the sometimes convergent, sometimes divergent relations between this region and the rest of the world. We will also challenge the stereotype of a monolithic and static East Asia and see to develop a critical understanding of the internal and external forces integrating and dividing this region. We will examine how international diplomatic, commercial, military, religious, and cultural relationships shaped the individual countries as well as their relationships with each other and the world. The course sweeps over large regions of time and space. It aims to put the contemporary discussion of globalization into historical perspective by examining the long-lasting interactions of East Asian countries with each other and the rest of the world. These connections were economic, political, cultural, and psychological. Topics include: global silver and trade flows, warfare and military technology, imperial domination and revolutionary resistance, and the role of historical memory, as in Nanking or Hiroshima. Sources include historical documents, pictures, films, and memoirs. As we move through the course material our goal is not to gain total knowledge of modern East Asia, nor of China, Japan, Korea nor Vietnam. Rather, by the end of the term you should be able to identify some of the main organizing themes in modern East Asian history and develop a greater understanding of the construction and nature of historical knowledge itself. Offered as HSTY 132 and ASIA 132.

HSTY 133. Introduction to Chinese History and Civilization. 3 Units.
This course explains the continuities and discontinuities in the history of China by stressing the development and distinctive adaptations of cultural, religious, and political patterns from the origins of the Chinese civilization to the present. By focusing on major cultural, socioeconomic, and political issues such as Confucianism, Buddhism, trade relations, imperialism, and intellectual discourse in the overall Asian context (with particular reference to Korea and Japan), we discuss the historical development of China and its situation on entering the 21st century. Taking into account the key historical events in the last century, we examine the emergence of China as a modern nation-state and the fundamental transformation of Chinese society in the postwar period. Offered as ASIA 133 and HSTY 133.
HSTY 135. Introduction to Modern African History. 3 Units.
A general introduction to major themes in modern African history, with an emphasis on the nineteenth and twentieth centuries. Topics include oral tradition and narrative, economic structure and dynamics, religious movements, colonialism, nationalism, and the dilemmas of independent African states. Offered as ETHS 253A and HSTY 135.

HSTY 136. Introduction to Latin American History. 3 Units.
This course provides an introduction to the historical and cultural development of Latin America, in an attempt to identify the forces, both internal and external, which shape the social, economic and political realities in present day Latin America. Beginning with its pre-Columbian civilizations, the course moves through the conquest and colonial period of the Americas, the wars of independence and the emergence of nation-states in the nineteenth century, and the issues confronting the region throughout the turbulent twentieth century, such as migration and urbanization, popular protest and revolution, environmental degradation, great power intervention, the drug trade and corruption, and the integration of the region into the global economy. Offered as ETHS 253B and HSTY 136.

HSTY 137. Introduction to Modern South Asia. 3 Units.
This course will introduce students to the history of the region that today includes India, Pakistan and Bangladesh. The course will deal with the following themes: global trade between the Indian subcontinent and the West in the 17th century; the rise of the East India Company's dominance over the Indian subcontinent in the 18th century; the transformation of India into a colonial economy; social and religious reform movements of the 19th century; changing modalities of colonial rule after the transfer of governing power from the East India Company to the British Crown-in-Parliament; the emergence and trajectories of elite and popular anti-colonial nationalisms; the struggles of women, low status groups, and other minorities in the region; decolonization; and the partition of the subcontinent.

HSTY 138. Radical History in America. 3 Units.
This course examines the radical tradition in America from the time of the American Revolution until the present. Topics will include abolitionism, suffrage, anarchism, socialism, communism, black power, feminism, the New Left, radical environmentalism, and queer liberation. Recommended Preparation: High school American history.

HSTY 152. Technology in America. 3 Units.
Origins and significance of technological developments in American history, from the first settlements to the present. Emphasis on the social, cultural, political, and economic significance of technology in American history.

HSTY 157. Women's Histories in South Asia. 3 Units.
This course traces the history of women in South Asia from pre-colonial times to the present. Themes explored in the course will include (but not be limited to): the historical transformations of institutions shaping women's lives such as state, family, religious and legal traditions; the impact of colonialism, nationalism, and decolonization on women, as well as the history of women's movements in various parts of South Asia. As we acquaint ourselves with the vibrant historiography on women in South Asia, we will also examine the theoretical and methodological challenges involved in writing histories using the analytical lens of gender. While a significant portion of the readings will focus on South Asia, we will occasionally bring in insights from histories of women in other parts of the world to help develop comparative perspectives and evaluate the South Asian cases and examples within the broader field of women's history. Offered as HSTY 157 and WGST 257.

HSTY 163. Modern Britain and Its Empire. 3 Units.
This lecture and discussion course covers the history of Britain at the height of its political and industrial power and the history of the expanding and contracting British Empire. Britain was a nation of great technological, economic, and military power, but it also experienced extraordinary stresses. Industrialization meant material prosperity for some, but hardship and dehumanization for others. Many questioned how overwhelming poverty and ignorance could be allowed to stand beside such vast affluence. And subjects of the British in India, Ireland, and elsewhere struggled for independence from an empire that claimed to bring freedom, reason, and equality. The British learned to their cost, too, that decolonization often meant being caught in the crossfire of ethnic rivals. This course will explore the many paradoxes of the history of the British at their most dominant.

HSTY 193. The Ancient World. 3 Units.
Ancient Western history from the origins of civilization in Mesopotamia to the dissolution of the Roman Empire in the West. Offered as CLSC 193 and HSTY 193.

HSTY 201. Science in Western Thought I. 3 Units.
The development of Western thinking about the natural world and our relation to it, as part of culture, from pre-classical civilizations to the age of Newton.

HSTY 202. Science in Western Thought II. 3 Units.
The development of Western thinking about the natural world and our relation to it, as part of culture, from Newton to the modern age. HSTY 201 is not a prerequisite.

HSTY 203. Natural Philosophy I. 3 Units.
Historical and philosophical interpretation of some epochal events in development of science. Copernican revolution, Newtonian mechanics, Einstein's relativity physics, quantum mechanics, and evolutionary theory; patterns of scientific growth; structure of scientific "revolutions;" science and "pseudo-science." First half of a year-long sequence. Offered as HSTY 203 and PHIL 203.

HSTY 204. Introduction to the Nonprofit Sector. 3 Units.
The United States has by far the largest and most important "nonprofit sector" in the world, a sector consisting of voluntary non-governmental organizations that provide health care, education and social services as well as arts, religious, and advocacy activities. Using mostly primary sources, this course considers the significance of the nonprofit sector in the U.S., its advantages and disadvantages, its uses for different groups of Americans, and current trends. Students have the option of writing either a standard term paper, or a study of strategic challenges facing a contemporary nonprofit organization. Offered as HSTY 204 and HSTY 404. Counts as SAGES Departmental Seminar.
HSTY 206. Ancient and Medieval Spain: Prehistory to 1492. 3 Units.
This course focuses on the history of the Iberian peninsula from before the Roman conquest from the Iberians, Greek, and Carthaginian settlements, through Roman, Visigothic, and Muslim rule to the conquest of Ferdinand and Isabella of the last non-Christian territory on the peninsula in 1492. The issues of conquest, frontier, cultural diversity, and change, tolerance, and intolerance will be examined. Offered as CLSC 206 and HSTY 206.

HSTY 207. Natural Philosophy II. 3 Units.
Conceptual, methodological, and epistemological issues about science: concept formation, explanation, prediction, confirmation, theory construction and status of unobservables; metaphysical presuppositions and implications of science; semantics of scientific language; illustrations from special sciences. Second half of a year-long sequence. Offered as HSTY 207 and PHIL 204.

HSTY 208. Social History of Crime. 3 Units.
This course explores the relationship between law and history in American society. It uses social history methodology to suggest new ways of understanding how the law works as a system of power to advance certain interests at the expense of less powerful groups. Emphasis is on issues of pressing concern to America's poor and working class, including the death penalty, abortion, rape, the war on drugs, and the prison industry.

HSTY 210. Byzantine World 300-1453. 3 Units.
Development of the Byzantine empire from the emperor Constantine's conversion to Christianity and founding of the eastern capital at Constantinople to the fall of Constantinople to Turkish forces in 1453. Offered as CLSC 210 and HSTY 210.

HSTY 211. The Medieval World, 300-1500. 3 Units.
Medieval history and civilization from the fall of the Roman Empire to the age of the Renaissance. Interactions between medieval Europe and other Mediterranean and Eurasian cultures.

HSTY 212. Modern European History. 3 Units.
The history of Europe from the late eighteenth century to the present. Themes include political upheavals and movements, as well as industrial, social, intellectual, and cultural changes. This course provides a solid foundation for those wishing to take more specialized courses in European history.

HSTY 215. Europe in the 20th Century. 3 Units.
The twentieth century has seen stupendous transformations in the internal structures of European politics, economics, society, and culture and in Europe's place in the world. This course traces Europe's transition from a continent of sovereign nation-states or empires ruled by monarchs with starkly hierarchical social structures, through wars, revolution, dictatorships, destruction, division, and destititution, to a conflicted present. The contradictory combination of peace, freedom, and pluralism combined with cultural critique of the very consumer society that has reduced conflict challenges students' linear notions of historical development.

HSTY 216. Vikings and Medieval Scandinavia. 3 Units.
A survey of the history of the Vikings and medieval Scandinavia, covering approximately the eighth to the fifteenth centuries AD. Topics explored include: causes of the "outbreak" and cessation of Viking expeditions, the role of the Vikings as raiders and/or traders in Western Europe, the role of the Vikings in the emerging states of Russia, Iceland and medieval Scandinavian law, the historicity of the saga literature, and Viking descendants--Normans and "Rus."

HSTY 218. Jews in Early Modern Europe. 3 Units.
This course surveys the history of Jews in Europe and the wider world from the Spanish expulsion through the French Revolution. Tracking peregrinations out of the Iberian Peninsula to the British Isles, France, Holland, Italy, Germany, Poland-Lithuania, the Ottoman Empire, and the American colonies, it examines the diverse ways Jews organized their communities, interacted with their non-Jewish neighbors, and negotiated their social, economic, and legal status within different states and empires. What role did Jews play and what symbolic place did they occupy during a period of European expansion, technological innovation, artistic experimentation, and religious and political turmoil? What internal and external dynamics affected Jewish experiences in the sixteenth, seventeenth, and eighteenth centuries? Through a selection of inquisitorial transcripts, government records, memoirs, and historical literature, we will explore topics such as persecution, conversion, messianism, toleration, emancipation, and assimilation. Offered as HSTY 218, JDST 218, and ETHS 218. Counts as SAGES Departmental Seminar.

HSTY 219. Berlin in the Tumultuous 20th Century. 3 Units.
The tumultuous but short twentieth century began and ended with a united Germany, with Berlin as its capital. But in between, Berlin, and Berliners, experienced the extremes of the economic, technological, and cultural progress that the century brought, and the devastation, violence, division, and uncertainty that it also brought. This course, taught with Berlin as its laboratory, introduces students to the German tumult of the twentieth century. We will read about historical events and developments, and then visit the places where those events and developments occurred. We will address persistent questions, such as why and how did Hitler come to power; what was life like behind the Berlin wall; why is there a Forever 21 across from the Kaiser-Wilhelm-Memorial Church; how does one come to grips with a history like Germany's in the twentieth century; and what has life been like for ordinary Berliner/innen. Students are welcome to take this course before they have any background or acquaintance with the German language, although the instructor expects students to be able to navigate independently in Berlin after he provides them with an introduction. German proficiency will enrich the student's experience in Berlin, and the instructor hopes that some of the students who enroll will already be pursuing the study of the German language. The instructor further hopes that students who have never before studied German language will be inspired to begin to learn German after they return to Case Western Reserve. Counts as SAGES Departmental Seminar.

HSTY 220. The Early Modern Mediterranean. 3 Units.
For centuries before Columbus crossed the Atlantic Ocean, travelers and traders, pirates and pilgrims, mercenaries and missionaries explored the contours of the Mediterranean Sea--and engaged in commerce, as well as religious, economic and military competition. If religion and ethnicity divided Muslims, Christians and Jews from Algiers to Athens, did shared geography, foodstuffs, and cultural values bind them together? This course examines the unity and diversity of this maritime region by considering the peoples, beliefs, commodities and diseases that circulated through it during the sixteenth, seventeenth, and eighteenth centuries. Does the early modern Mediterranean showcase a clash of civilizations or provide an enduring model for coexistence? Topics include merchant culture, diplomacy, honor and shame, slavery and colonization. Offered as ETHS 220, HSTY 220.
HSTY 222. Becoming Ken Burns: An introduction to Public History. 3 Units.

This course focuses on the practice of public (applied) history in the United States. Its purpose is to familiarize students with the background (historical and contemporary) of the manners in which history is taught and used outside of the school or college classroom as well to familiarize them with potential careers in public history, including museum work; editing; documentary film production; and the growing business of "history for hire." This overview will be complemented by an examination of a number of major issues in public history including the debate as to whether it can be as authoritative and insightful as academic scholarship, and the potential influences of the marketplace and politics on the topical focus and accuracy of public history "products." The course combines lecture and seminar-style classroom sessions with a variety of assigned readings, site visits, and an examination of public history products ranging from documentaries to monuments and recreated historical "landscapes" in order to provide students with a theoretical and "actual" introduction to the field. All assignments and examinations will be structured as essays based upon readings, lectures, discussion, site visits, and independent research conducted by the student.

HSTY 224. Early Modern Europe. 3 Units.

Europe has not always existed. To find out who created it and when, this course will ask two fundamental questions: First, how did the geographic, linguistic, religious and ethnic characteristics of European identity develop over the course of the sixteenth, seventeenth and eighteenth centuries? Second, how did Europeans in this period influence other parts of the world? Through close readings of memoirs, treatises and chronicles, and discussions of secondary literature, we will explore the political, social, and religious history of Europe from roughly 1500 to 1800. Topics include: exploration and conquest; Protestant and Catholic reformation; witchcraft and popular culture; science and medicine; Enlightenment and Revolution.

HSTY 225. Evolution. 3 Units.

Multidisciplinary study of the course and processes of organic evolution provides a broad understanding of the evolution of structural and functional diversity, the relationships among organisms and their environments, and the phylogenetic relationships among major groups of organisms. Topics include the genetic basis of micro- and macro-evolutionary change, the concept of adaptation, natural selection, population dynamics, theories of species formation, principles of phylogenetic inference, biogeography, evolutionary rates, evolutionary convergence, homology, Darwinian medicine, and conceptual and philosophic issues in evolutionary theory. Offered as ANTH 225, BIOL 225, EEPS 225, HSTY 225, and PHIL 225.

HSTY 228. African Americans and Internationalism, 1885-1960s. 3 Units.

This course explores the development and articulation of African American Internationalism from the formal advent of the colonial project with the Berlin Conference in 1884-1885 up through the early stages of African decolonization in the 1960s. Internationalism is defined here, especially as it relates to African Americans, as the sustained interest among governmental and non-governmental actors in promoting a foreign policy agenda that sought to impact events in the Diaspora and on the African continent itself. Using Africa, Asia and the Caribbean as case studies, this course will excavate the role of governmental and non-governmental actors such as the African American press, church, civil rights organizations, advocacy groups and diplomats in developing a viable African American foreign policy constituency. This course will stress the centrality of race, gender and transnationalism as central proponents in the development of black internationalism. This course will examine a number of global events and the roles played by African Americans in shaping the outcomes including the Berlin Conference (1885), the Spanish American War (1898), the Russo-Japanese War (1905), The Mexican Revolution (1910-1920), World War I (1914-1919), the Italo-Ethiopian War (1935), World War II (1939-1945), and the beginning of the formal decolonization of Africa with Ghanaian independence in 1957 and the subsequent challenges faced by various African countries in the early 1960s. The course will utilize biographies, case studies, and primary documents to examine these issues.

HSTY 229. Asian Christianity: Historical Perspectives. 3 Units.

The history of Christianity in Asia is as old as the history of Christianity itself. But while much has been told about Christianity as it grew from an obscure Jewish sect to mighty Western Christendom, not enough attention has been given to the Christianity which spread eastwards to Asia in the first millennium of the Christian era. This course seeks to correct the imbalance by introducing students to a historical exploration of the eastward movement of Christianity from Jerusalem to different parts of Asia. Topics include the Assyrian Church of the East in Persia, India and China, European Catholic and Protestant colonial missions in the age of European imperialism, and the Jesuit missions to Japan and China. By the end of the semester, students should have a good grasp of the historical encounter of Christianity with the political, social, cultural and religious realities of Asia. Its dialogue and confrontation with these realities and the forces that led to its growth and decline. Offered as HSTY 229 and RLGN 229. Counts as SAGES Departmental Seminar.

HSTY 231. Greek Civilization. 3 Units.

This course constitutes the first half of a year-long sequence on classical civilization. It examines the enduring significance of the Greeks studied through their history, literature, art, and philosophy. Lectures and discussion. (For the second course in the sequence, see CLSC 232 and HSTY 232.) Offered as CLSC 231 and HSTY 231.

HSTY 232. Roman Civilization. 3 Units.

The enduring significance of the Romans studied through their history, literature, art, and philosophy. Lectures and discussion. Offered as CLSC 232 and HSTY 232.
HSTY 234. France and Islam. 3 Units.
This seminar examines French encounters with the Muslim world from the Middle Ages to the present. Over the last millennium, France has viewed Saracens, Moriscos, Turks, Berbers, and Arabs with admiration and fear, disdain and incomprehension. Between the eleventh and thirteenth centuries, French soldiers battled in the Holy Land; for several hundred years after that, France and the Ottoman Empire exchanged diplomats, traders and slaves. The colonial occupation of Algeria that began in 1830 ended violently in 1962. By then, the empire that struck back had also come home through large waves of immigration. Today, the social and economic status, religious affiliation, political significance and cultural impact of French citizens of North African descent are the subject of burning national debate. Taking a long view on Franco-Muslim relations, the course will explore such topics as the Crusades, Mediterranean piracy and captivity, Napoleon’s Egyptian campaign, the Algerian War of Independence, the “veil affair,” riots in the suburbs of Paris and World Cup soccer. Offered as ETHS 234, HSTY 234. Counts as SAGES Departmental Seminar.

HSTY 235. Pirates in the Early Modern World. 3 Units.
From the Caribbean to Somalia, pirates have captivated the American imagination. Beyond examining images of heroic outlaws and bloodthirsty criminals in popular culture and current affairs, this course investigates maritime predators of the early modern period (16th-18th centuries). With a focus on the Mediterranean and the Atlantic—and forays into the Indian Ocean, the Red Sea and elsewhere—it considers the motivations and strategies of sea robbers and the responses of states. What, it asks, can Barbary corsairs, Dutch freebooters, Spanish “sea dogs,” and Catholic privateers, teach us about social rebellion, religious conflict, economic development, political authority, legal norms, naval power and imperial expansion?

HSTY 241. Inventing Public Health. 3 Units.
The core principle of this course is that public health is a concept that was formed in different ways at different times in different places. It had no existence as we know it before the nineteenth century, but course participants will learn how it grew out of an ancient tradition of the political elite’s concern that its subjects were a threat to them and the stability of the realm. Course participants will discover how, in the nineteenth century, it became a professional practice as we know it and realized advances in human health, longevity, and security perhaps greater than any made since. At the same time, the course will also cover how many of the assumptions of those that inaugurated public health were completely alien to present-day practitioners—even though in many ways it is a practice that helped inaugurate the modern world so familiar to us. Course participants will learn about the close relationship between public health agencies and agendas and various kinds of social authority: political power, moral influence, colonial power, and others. Ultimately, the aim of the course is to show participants that even though public health seems a supremely common sense practice, it had a highly contested birth and early life that was anything but natural or pre-ordained. That complicated birth continues to shape public health to this day.

HSTY 243. The Age of Prozac: Social and Cultural Aspects of Depression. 3 Units.
Although often experienced as an intensely individual, private, and painfully isolated affliction, depression has profound social and cultural dimensions. This course will neglect neither biological (neurochemical or genetic) perspectives, nor personal or psychological aspects, but will emphasize perspectives derived from history, anthropology, and sociology. While there may be tangential attention to bi-polar disorder (“manic depression”), the emphasis will be on unipolar depression. The course will conclude with an in-depth exploration of the rise of pharmaceutical treatments.

HSTY 246. People and the Land in Pre-Modern Europe. 3 Units.
This course explores the relationship between the peoples of Europe and their environments as Europe changed from a backwater of the Roman Empire into the seat of a number of globe-spanning empires. It examines how Europeans changed the land over time in order to derive a subsistence, produce profit, and, later, to fuel the growth and power of early modern state. The course will delve into the ways that Europeans thought about nature and conceived of their place in it. It will also explore how the environment itself influenced the courses of European societies; how climate and disease, animals and energy sources affected population growth, industrial activity, and even legal systems. As European powers sent their conquerors and colonists across the globe, they carried with them a tradition of thinking about, and interacting with, the environment in ways that had dramatic consequences for the world beyond Europe, and this course investigates whence this tradition came.

HSTY 249. The Global Middle Ages: From Paris to Baghdad. 3 Units.
This reading-intensive course will explore the ways in which medieval thought was manifested in Christian and Islamic art, and discuss parallels, divergences, and convergences between the two visual cultures. Topics will include, but will not be limited to, medieval attitudes towards the body as manifested in illuminated manuscripts; art as a tool for religion and a vehicle for devotion; illustrations in herbs and medical books; advances in architecture; literary themes translated into visual art; art created by and for women, and the image as an instrument for political thought and propaganda. While Christian and Islamic visual cultures are traditionally studied separately, this course will examine medieval culture as a whole, thereby providing the students with a distinctive educational experience. Offered as ARTH 249 and HSTY 249.

HSTY 250. Issues and Methods in History. 3 Units.
A methodological introduction to historical research. Students use a variety of approaches to interpret and study historical problems. Specific topics and instructors normally vary from year to year.

HSTY 252A. Introduction to African-American Studies. 3 Units.
This course is designed to introduce students to the study of Black History, cultures, economics, and politics. Students will learn about the development of the field by exploring theoretical questions, methodological approaches, and major themes that have shaped the study of black people, primarily in the U.S. context. This is a seminar-style, discussion-based course that emphasizes critical analysis and expository writing. Offered as ETHS 252A and HSTY 252A.

HSTY 254. The Holocaust. 3 Units.
This class seeks to answer fundamental questions about the Holocaust: the German-led organized mass murder of nearly six million Jews and millions of other ethnic and religious minorities. It will investigate the origins and development of racism in modern European society, the manifestations of that racism, and responses to persecution. An additional focus of the course will be comparisons between different groups, different countries, and different phases during the Nazi era. Offered as HSTY 254, RLGN 254, ETHS 254, and JDST 254.
HSTY 255. Economic History of the United States. 3 Units.
The growth of the American economy from the colonial period to the present. Competing explanations of economic growth; significant attention to the political and legal environment in which the U.S. economy developed; "lessons" of past experience for contemporary policy; some attention to inequality and the changing distribution of wealth and income. Offered as ECON 255 and HSTY 255.

HSTY 256. American Political History. 3 Units.
From the origins of American politics in the colonial period to the present. The Revolution and Constitutional debate; presidential politics and leadership; voters and voting patterns; Congress and the courts. Emphasis both on the ideas that animated American politics and on the relation of politics to society.

HSTY 257. Immigrants in America. 3 Units.
Immigration to America has constantly reshaped the way the nation views itself. This course examines the overall history of immigration to the United States, but places that movement within a global context. It also pays particular attention to the roles that policy and technology have played in controlling or defining immigration to America.

HSTY 259. Introduction to Latina/o Studies. 3 Units.
Interdisciplinary introduction to the basis for a Latina/o ethnicity through an exploration of commonalities and differences in the peoples of Latin American and Caribbean origin within the continental United States. Topics include methodological and theoretical formulations central to the field (e.g., racial, gender, and sexual formations, modes and relations of production and class, nation and transnation), history and contemporary issues of identity, family, community, immigration, and the potential for a pan-ethnic identity. Discussions will focus on major demographic, social, economic and political trends: historical roots of Latinas/os in the U.S.; the evolution of Latina/o ethnicity and identity; immigration and the formation of Latina/o communities; schooling and language usage; tendencies and determinants of socioeconomic and labor force status; discrimination, segregation and bias in contemporary America; racial and gender relations; and political behavior among Latinas/os. Offered as: ETHS 252B and HSTY 259.

HSTY 260. U.S. Slavery and Emancipation. 3 Units.
Begins with the African encounter with Europeans during the emergence of the modern slave trade. Students are introduced to the documents and secondary literature on the creation and maintenance of slavery, first in colonial America, and then in the United States. The course concludes with the destruction of slavery. Offered as ETHS 260 and HSTY 260.

HSTY 261. African-American History 1865-1945. 3 Units.
Explores the fashioning of a modern African-American culture between emancipation and the end of World War II. Emergence of a northern-based leadership, the challenge of segregation, emergence of bourgeois culture, the fashioning of racial consciousness and black nationalism, the shift from a primarily southern and rural population to one increasingly northern and urban, the creation and contours of a modern African-American culture, the construction of racial/gender and racial/class consciousness. Offered as ETHS 261 and HSTY 261.

HSTY 262. African-American History Since 1945. 3 Units.
Completes the three-term sequence of the African-American history survey (although the first two courses are not prerequisites for this course). Explores some of the key events and developments shaping African-American social, political, and cultural history since 1945. Offered as HSTY 262 and ETHS 262.

HSTY 265. Economic History of the United States. 3 Units.
The growth of the American economy from the colonial period to the present. Competing explanations of economic growth; significant attention to the political and legal environment in which the U.S. economy developed; "lessons" of past experience for contemporary policy; some attention to inequality and the changing distribution of wealth and income. Offered as ECON 255 and HSTY 255.

HSTY 270. Introduction to Gender Studies. 3 Units.
This course introduces women and men students to the methods and concepts of gender studies, women's studies, and feminist theory. An interdisciplinary course, it covers approaches used in literary criticism, history, philosophy, political science, sociology, anthropology, psychology, film studies, cultural studies, art history, and religion. It is the required introductory course for students taking the women's and gender studies major. Offered as ENGL 270, HSTY 270, PHIL 270, RLGN 270, SOCI 201, and WGST 201. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

HSTY 272. Sports in America: From Play to Profit. 3 Units.
This course reviews the history of sports in America from the colonial period to the present. It gives particular attention to the evolution of sports as a major business and to the roles of gender, ethnicity, and race in the history of America sport, as well as to the emergence of sport as a major defining characteristic of America life and society.

HSTY 275. Immigration in America. 3 Units.
This course surveys world migrations, from the origins of mass migration to the present. It explores the causes of migration, the economic and social consequences of immigration, and the role of migration in shaping American society.

HSTY 277. The Japanese Experience. 3 Units.
This course covers the social, political, and cultural history of Japan from the Meiji period to the present. It explores the impact of modernization, the role of the state, and the development of a modern Japanese identity.

HSTY 278. Nineteenth-Century Europe. 3 Units.
This course explores the history of Europe from the Enlightenment to the end of World War I. It examines political, social, and cultural developments in Western Europe, including the rise of nationalism and the transformation of the capitalist economy.

HSTY 280. History of Modern Mexico. 3 Units.
This course explores the history of modern Mexico, focusing on key periods such as the Mexican Revolution, the Cold War, and the War on Drugs. It examines political, social, and cultural developments in Mexico and their impact on the Mexican people.

HSTY 285. Modern Japan. 3 Units.
This course introduces students to the modern history of Japan, focusing on key events such as the Meiji Restoration, World War II, and the post-war period. It examines political, social, and cultural developments in Japan and their impact on the Japanese people.
HSTY 287. State, War, Drugs, and Coffee in Colombia: History of Modern Colombia. 3 Units.
This course will analyze the major forces that have shaped Colombian history from the 19th century to the present. Colombia is one of the largest and most fascinating countries in Latin America. It has been intricately linked to the U.S. market as a major coffee producer and, more recently, as a major supplier of illicit drugs. Colombia has always been one of the wealthier Latin American countries, and it has a high degree of electoral democracy. Paradoxically, however, Colombia has also experienced rather high levels of regionalism and political violence. This course seeks to explore the history of these paradoxes. It will situate Colombia’s contemporary conflicts within a larger historical perspective. Offered as ETHS 287 and HSTY 287.

HSTY 288. Imperial China: The Great Qing. 3 Units.
This course is an introduction to the history of Imperial China, from the fall of the Ming Dynasty in 1644 to the creation of the Chinese republic in 1912. We will explore the major historical transformations (political, economic, social, and cultural) of the last imperial dynasty, the Qing (1644–1911), and develop an understanding of the major social, political, economic, and intellectual cultural forces shaping the formation of modern China. Contrary to commonly-held ideas in both West and in China that traditional Chinese society was timeless or stagnant, historians now see dramatic and significant changes during this period—to the economy, to gender relations, to religion, and to many other aspects of life. This course surveys the social, political, economic, and cultural history of this era, with emphasis on recent research. The main goals of the course will be to acquaint students with the key changes and to show the interplay between economic, social, and cultural changes on the one hand and political developments on the other. By the end of the semester you should have a good sense of how Chinese society was transformed over the course of the 17th through early 20th centuries. The topics we will discuss include urbanization and commerce; gender, family and kinship; education and the examination system; opium and free trade; and ethnicity and nationalism. Offered as ASIA 288 and HSTY 288.

HSTY 289. Reform, Revolution, Republics: China 1895 to Present. 3 Units.
Completes a two-term sequence of the Chinese history survey, although HSTY 288 is not a prerequisite for this course. Beginning with the First Sino–Japanese War (1895), we review the historical development of intellectual discourse, public reaction, and political protest in later Imperial China through the creation of the People’s Republic in 1949 forward to contemporary times. In contrast to the conventional description of China from a Western point of view, this course tries to explain the emergence of modern China in the context of its intellectual, political, and socioeconomic transformation as experienced by Chinese in the late 19th and into the 20th century. By discussing the influence of the West, domestic rebellions, and political radicalism, we examine how the Chinese state and society interacted in search for modernization and reforms, how these reforms were continued during the Republican period, and to what extent historical patterns can be identified in China’s present-day development. Offered as ASIA 289 and HSTY 289.

HSTY 292. Energy and Environment in American History 1750-2010. 3 Units.
This course uses the prism of energy to examine the history of the United States from the colonial period to the present. We will consider how energy has affected, and is affected by, American society, culture, science and technology, politics, diplomacy, and the environment. Four broad, thematic questions will recur throughout the semester. First, how has increasing energy use transformed American social life, the economy, and politics? Second, what are the relationships between energy consumption and environmental change? Third, what are the relationships between scientific discoveries, technological innovation and social change? And finally, how did the United States grow to be the largest consumer of energy in the history of the world? Addressing these questions will reveal the fundamental ways in which energy has shaped American history.

HSTY 293. History of Drugs. 3 Units.
This course will survey the rise and political, social, and cultural effects of drugs in modern societies with an emphasis on the late 19th and 20th century United States. First we will examine the global emergence and popularization of drugs as part of what David Courtwright has coined the “psychoactive revolution.” Then, we will narrow this broad lens by shifting our gaze to narcotics in the expanding U.S. nation. Specifically, we will examine the shifting demographics, nature of, and debates regarding narcotic consumption, regulation, and policy—and how these disparately affect and shape the lives of diverse populations. Finally, we will explore the human toll of narcotics in post-World War II culture and cities. Counts as SAGES Departmental Seminar.

HSTY 298. Departmental Seminar. 3 Units.
The Department of History Departmental Seminar. A topical course, emphasizing disciplinary forms of writing, it is recommended for students before the end of their junior years. The class will advance the goals of SAGES within the disciplinary context of history by focusing on close readings of texts, analytical writing, and intensive seminar-style classroom discussions. Counts as SAGES Departmental Seminar.

HSTY 299. Topics in History. 3 Units.
Subject matter will vary with instructor but will focus on some particular topic or historical approach. Course description available from departmental office.

HSTY 302. Ancient Greece: Archaic, Classical, and Hellenistic Periods. 3 Units.
The rise of Hellenic thought and institutions from the eighth to the third centuries B.C., the rise of the polis, the evolution of democracy at Athens, the crises of the Persian and Peloponnesian Wars, fifth-century historiography, the growth of individualism, and the revival of monarchy in the Hellenistic period. Offered as CLSC 302 and HSTY 302.

HSTY 303. History of the Early Church: First Through Fourth Centuries. 3 Units.
Explores the development of the diverse traditions of Christianity in the Roman Empire from the first through the fourth centuries C.E. A variety of New Testament and extra-Biblical sources are examined in translation. Emphasis is placed on the place of Christianity in the larger Roman society, and the variety of early Christian ideals of salvation, the Church, and Church leadership. Offered as HSTY 303 and RLGN 373.
HSTY 304. Ancient Rome: Republic and Empire. 3 Units.
Growth and development of the Roman state from the unification of Italy in the early third century B.C. to the establishment of the oriental despotism under Diocletian and Constantine. The growth of empire in the Punic Wars, the uncertain steps toward an eastern hegemony, the crisis in the Republic from the Gracchi to Caesar, the new regime of Augustus, the transformation of the leadership class in the early Empire, and the increasing dominance of the military over the civil structure. Offered as CLSC 304 and HSTY 304.

HSTY 306. History of Museums: Theory and Reality. 3 Units.
This course is an intensive summer internship (10 hours per week) at the Western Reserve Historical Society, complemented by extensive readings in museum/archival theory and public historical perception. It is designed both to introduce students to museum/archival work and to compare theoretical concepts with actual museum situations. Interns will be assigned a specific project within one of the Society’s curatorial or administrative divisions, but will have the opportunity to work on ancillary tasks throughout the Historical Society’s headquarters in University Circle. Offered as HSTY 306 and HSTY 406.

HSTY 307. Development of Chemistry and Chemical Engineering. 3 Units.
The development of chemical ideas; theories of matter, composition, structure, and reaction; the application of chemistry and chemical theory from antiquity to the 20th century; all considered in social context. Recommended preparation: One year of college chemistry. Offered as: HSTY 307 and HSTY 407.

HSTY 309. Reformation Europe, 1500-1650. 3 Units.
Origins and development of Protestantism, the Catholic Counter-Reformation, and the interaction between secular power and religious identity in Christian Europe. Offered as HSTY 309 and RLGN 374.

HSTY 310. The French Revolutionary Era. 3 Units.
Causes, progress, and results of the internal transformation of France from 1789 to 1815; impact of revolutionary ideas on other European and non-European societies.

HSTY 311. Seminar: Modern American Historiography. 3 Units.
This seminar examines the approaches that professional historians of the United States have taken to the writing of American history in the past fifty years, with emphasis on changes in historical concerns, master debates among historians, and contemporary interests. Topics covered include national politics and government, economic development, social history, the history of ethnicity, race, and gender, and foreign policy and international relations. Each student will read widely and will prepare a series of reports on selected books and authors. Offered as HSTY 311 and HSTY 411.

HSTY 315. Heresy and Dissidence in the Middle Ages. 3 Units.
Survey of heretical individuals and groups in Western Europe from 500-1500 A.D., focusing on popular rather than academic heresies. The development of intolerance in medieval society and the problems of doing history from hostile sources will also be explored. Offered as HSTY 315 and RLGN 315.

HSTY 318. History of Black Women in the U.S.. 3 Units.
Chronologically arranged around specific issues in black women's history organizations, participation in community and political movements, labor experiences, and expressive culture. The course will use a variety of materials, including autobiography, literature, music, and film. Offered as ETHS 318, HSTY 318, and WGST 318.

HSTY 319. The Crusades. 3 Units.
This course is a survey of the history of the idea of "crusade," the expeditions of Western Europeans to the East known as crusades, the Muslim and Eastern Christian cultures against which these movements were directed, as well as the culture of the Latin East and other consequences of these crusades. Offered as HSTY 319 and RLGN 319.

HSTY 320. Departmental Seminar: Alexander the Great. 3 Units.
This course is the Classics Departmental Seminar in the SAGES sequence, though it can also be taken for regular credit in Classics or History. The seminar on Alexander the Great is normally taken in the Spring semester of junior year, and offers students a firm grounding in the diverse materials, methods, and approaches that can be brought to bear on the study of Greco-Roman antiquity and of its legacy up to today. Alexander's career is urgently relevant today for two primary reasons: the establishment of new forms of interaction between European "western" and Asian "eastern" civilizations; and the idea of global domination, wedding Greek and Asian as well as African (Egyptian) conceptions of rule and governance. Beyond the exploration of the ancient world of, or shaped by, Alexander, we will focus also on the reception of the historical figure, i.e., on the sometimes fantastic image of Alexander diffused in later epochs (Islamic, medieval) as well as on the more critical but often ideologically slanted early modern approach. Because of the expansion of the scope of the seminar (as of Alexander himself) beyond Europe and the critical examination of the traditional separation of East and West—or the three continents (Europe, Africa, and Asia) distinguished in antiquitythis course qualifies as a Global and Cultural Diversity course. Offered as CLSC 320 and HSTY 320. Counts as SAGES Departmental Seminar.

HSTY 321. The Archaeology of Iron Age Italy and Sicily, ca. 1000-300 BCE. 3 Units.
This course traces the early history and archaeology of the Italian peninsula and Sicily from ca. 1000 BCE to 300 BCE. During this period, the movement of people brought with a transfer of people, ideas, and culture (both social and material) that would transform the population and landscape of ancient Italy and Sicily. We will look first at Southern Italy and Sicily, where, from about 750 BCE, Greek and Phoenician colonists settled. We will examine the characteristics of Greek and Phoenician colonies and monuments, as well as the characteristics of the interactions between the new arrivals and the indigenous population, especially the Sikels. We will then examine how the Villanovan culture was supplanted by the Etruscans in west-central Italy. Through the close examination of the material culture we will address topics such as status, urbanization, religion and ritual, and the cultures of Italy and Sicily within the wider Mediterranean world. Finally, we will look at another movement of people and politics: the expansion of Roman hegemony throughout the peninsula. Numerous theories attempt to explain the effect Roman occupation had on the other populations. We will analyze these theories and look for ourselves on the numerous ways indigenous populations could respond to "foreign" occupiers and how the occupiers responded to the indigenes. We will "read" material culture almost like text, guided by concepts such as "style," "agency" and "habitus" among others. Through these lenses we will examine the archaeological material from multiple points of view (social, economic, religious, political). In turn, recent theoretical advances that seek to explain the processes of accommodation and emulation of, and resistance to, outside cultural influences will be looked at with a critical eye so that we can come away with fresh ideas about understanding what, and who, culture really is. Offered as CLSC 321 and HSTY 321.
HSTY 324. Issues in Indian and Southeast Asian Art. 3 Units.
This course covers topics in the history of India and neighboring regions with emphasis on connections with works in the Cleveland Museum of Art. Offerings include The Buddha Image, Murals and Manuscripts, The Hindu Temple, Krishna in Art and Literature, and the History of Mughal Painting, Lectures, discussions, and reports. Offered as ARTH 342, ARTH 442, and HSTY 324.

HSTY 325. U.S. Politics, Culture, and Society: 1790-1860. 3 Units.
This is a survey of the history of the United States during the years between the Revolutionary era and the Civil War, exploring the transformation of American politics, religion, and culture, as well as the emergence of distinctive regional economies and social systems in the South, the Midwest, and the Northeast. It focuses especially on the emergence of the social institutions, patterns, and conflicts that still characterize the United States during the early twenty-first century. Particular attention is also paid to the experience of women and African Americans.

HSTY 326. The Holocaust and the Arts. 3 Units.
This course explores artistic output during the Holocaust, as well as responses to the Holocaust in various forms, including music, art, architecture, film, and literature. Offered as MUHI 326, JDST 326, HSTY 326 and RLGN 326.

HSTY 327. Comparative Environmental History. 3 Units.
Environmental history is the study of how humans have influenced the environments around them and how the environment itself has influenced the course of human societies. This course provides students with the skill to identify and analyze these interactions. It introduces course participants to the main themes of environmental history literature and the driving questions guiding environmental history research by examining case studies drawn around the globe, including Pre-Columbian America, Medieval Japan, Colonial Africa, and Modern Germany. This course will help course participants recognize the important patterns and developments that have led to present day human-environmental relationships. Offered as HSTY 327 and HSTY 427.

HSTY 328. Comparative Perspectives on Museum and Archive History and Practice. 3 Units.
Comparative Perspectives on Archives and Museum History and Practice is a distance learning based course shared with students at Bilkent University in Ankara, Turkey. The course focuses on a comparison of the history and development of archives and museums in the United States and in late Ottoman and Republican Turkey. Topics considered include the "ownership" of culture; state vs. private control of heritage; marketing of museums; and the impact of evolving technologies on the presentation and preservation of culture. Students work together via a shared, live lecture format. In addition to the instructor, museum and archive professionals from both the US and Turkey provide lectures and lead discussions during the semester. The primary intellectual product of the course is a final paper/project which compares the history, operational structure, and mission of a museum/archive in the US with a similar institution in Turkey. The paper/project is created by collaborative effort between a student at CWRU and one at Bilkent. Provided grant funding is available, the course may involve exchange visits to Turkey and the US. Offered as HSTY 328 and HSTY 428.

HSTY 329. Museums and Globalization. 3 Units.
Museums are everywhere contested spaces today. Historically designed as symbols of power, centers for research, agents of public education and community formation in Western industrial societies, they have become sites of development and cultural controversy on a global scale. From Cleveland and Paris to Nairobi and Dubai museums figure in urban redevelopment, national identity formation, conflicts between religion and science, and global tourism. Questions we will consider in this course: what are the fundamental features of museums as institutions? what ties have linked them to wider national and international communities of academics, NGO's and business? to political, economic and social concerns? how do museums in Asia, Africa, the Middle East, and Latin America figure in the current international contention over heritage rights? This is an innovative course allowing students to collaborate on projects, engage with guest lecturers and access museums across the globe. The course is organized in three parts: Part I: National Identity Building and Museums; Part II: Museums and Identity Politics; Part III: Museums and Global Development. Offered as HSTY 329, ARTH 301, HSTY 429, and ARTH 401.

HSTY 332. European International Relations 1789-1945. 3 Units.
Presents a broad interpretation of the development of the international system in Europe between the French Revolution of 1789 and the end of the European era in 1945. It explains why and how the closed European state system at the beginning of the nineteenth century evolved into an international transcontinental system by the early twentieth century. Counts as SAGES Departmental Seminar.

HSTY 333. Reading Capital: Political Economy in the Age of Modern Industry. 3 Units.
Since its first publication in German in 1867, and its appearance in English in 1886, Karl Marx's Capital: A Critique of Political Economy, Volume I, has occupied a seminal position in European thought. Beginning with the presumptions of classical liberal political economy, Marx employed his technique of the materialist dialectic to unmask, in his view, the contradictions and structural limitations that the capitalist mode of production imposed upon capitalists and proletarians alike. Much mentioned, but seldom read, Volume I of Capital remains a crucial window into understanding the intellectual, economic, social, and cultural currents of the 19th century, and its impact extends into the 21st. This course consists of a close, directed reading of the entire text of this volume, combined with discussion, research, and coordinated exploration, so that students can bring this powerful critique to bear on their reading of history and economics in the modern era.

HSTY 334. History of 19th Century Germany. 3 Units.
Examines the political, social, economic, and cultural history of Germany from the late eighteenth century to 1914. Explores the intellectual and social background to the rise of German liberalism and nationalism, the struggle with bureaucratic absolutism, the revolutions of 1848, industrial capitalism and the emergence of a class society, unification under Bismarck, the role of the state, culture, religion, and changes of mentality, the development of mass politics, and the coming of World War I.

HSTY 335. History of 20th Century Germany. 3 Units.
Examines the tumultuous history of Germany from 1914 to the unification of the two Germanys in 1989-1990. From the totalizing and traumatic experience of World War I, through a failed revolution, the republican experiment of Weimar, the National Socialist dictatorship under Hitler and the divided Germany suspended between the superpowers, to the newly unified democratic Federal Republic. Examines the ways in which Germans have tried to reconcile the state to their society, economy, and individual lives.
HSTY 338. History of the American West. 3 Units.
The U.S. West has meant many things throughout American history--early explorers called it the Great American Desert, railroad boosters lured settlers to it by promising to make the arid land bloom into an agricultural Eden, urban immigrants looked to its limitless stretches of land as an escape from industrial labor, children read dime novels that glorified its heroes, and millions of tourists celebrate its raw beauty by visiting Yellowstone, Yosemite, and the Grand Canyon. The West has also been home diverse native societies for thousands of years, Asian immigrants who viewed it as an eastern frontier, women who struggled to feed their children in an arid land, and Latin Americans, whose ancestors often preceded the entry of White Americans. This course introduces students to the themes, questions, and debates central to the study of the American west by drawing in primary source material and scholarly interpretations. The goal of this course is to provide students with an understanding of the human history of the American west and the ability to express that history in clear, passionate writing and in-class discussion.’

HSTY 339. The Origins of the Arab-Israeli Conflict, 1900-1948. 3 Units.
The British Empire took control of Palestine after driving the Germans and Turks from the region near the end of World War I. From that moment on, the British had an increasingly difficult time administering the region. Jewish colonists had already been settling in the land for decades, and with their takeover, the British gave them and other Zionists reason to believe that the Empire would facilitate Jewish efforts. At the same time, the indigenous Arabs of Palestine appealed to the British to protect their very birthright, to keep their country from passing into someone else’s hands. The British gave Arabs, too, reason to believe that they would recognize and defend their claims. In the few decades that the British Mandate governed Palestine it oversaw riots, revolution, and terrorist bombings. When it withdrew from Palestine, its legacy was a brutal war between Arabs and Jews; and the legacy of that war holds an iron grip on the course of world history to this day. Had the British Empire not been in Palestine, and not made the fateful decisions that it did, there would be no Israel and no Arab-Israeli conflict as we know them. Course materials include histories of Zionism, pre-Zionist Palestine, the British Mandate years, the British Empire in other Arab lands, and the 1948 war and aftermath. Primary sources from the perspective British officials on the ground in Palestine receive much attention. The histories of engineering and agriculture are highlighted alongside traditional social and political perspectives.

HSTY 340. A History of Workers in the United States. 3 Units.
This course examines the experience of working people in the United States with an emphasis on twentieth-century social movements. It explores the lives of the women and men, skilled and unskilled, and rural and urban laborers that produce the goods and provide the services that society consumes. At crucial moments, working people have created or helped sustain national social movements in an effort to improve some aspect of their lives. We therefore will assess laborers in relation to several known and less known American social movements, such as the eight-hour day movement during the late nineteenth century, the peace movement during WWI, and the Civil Rights movement in the wake of WWII. Throughout the course we will also discuss the politics of time-managed work; the influence of public policy and government institutions; the role of unions within a competitive market economy; the relationship between industrial economies and functional blue-collar communities; and the correlation between immigration and globalization. Offered as HSTY 340, HSTY 430, and ETHS 340. Counts as SAGES Departmental Seminar.

HSTY 341. Jewish Urban History. 3 Units.
This course examines the relationship between Jews and the modern urban environment. It seeks to answer questions such as: How did the modernization of cities affect Jews and Jewish communities? In what ways did Jews contribute to modern urban cultural and social forms? What is Jewish urban space, is it unique, and how is it remembered later on? Are there differences between the patterns in Europe, the Middle East, and the Americas? Offered as HSTY 341 and JDST 341. Counts as SAGES Departmental Seminar.

HSTY 342. Water. 3 Units.
This seminar will explore the history of the meaning of water--that is, the social, cultural, and/or political significance placed on water by individuals and governments in different times and places. It will also examine how humans have acted upon water, and how it has acted upon humans, with great consequences for human life. This seminar will look at the history of water in the context of science, technology and society; public health; political science; and environmental history. Case studies will be drawn from a wide chronological and geographical range; from the ancient world to Renaissance Italy, nineteenth century India, modern Britain, Egypt, and the U.S. The course provides a wide perspective on the themes of the history of human-water interactions, but will also focus closely on some critical cases. Seminar participants will write a research paper on the topic of their choice in the environmental history of water. Offered as: HSTY 342, HSTY 442, POSC 342, POSC 442.

HSTY 344. Origins of the British Empire 1450-1750. 3 Units.
How did early modern England come to rule an empire upon which the sun never set? What compelled individuals to seek their fortunes abroad, planting the flag of St. George in the outlying areas of the archipelago and halfway across the globe? This course examines the troubled birth of an empire and of a place called “Britain” at the same time. This seminar provides history majors with an experience of working with early modern primary documents of a wide variety; essays and book chapters will be paired with documents from early modern England itself. How do documents, images, and quantitative analyses help historians explain how the British Empire came into being? Offered as HSTY 344 and HSTY 444.

HSTY 345. The European City. 3 Units.
An examination of architectural, social, cultural, philosophical, political, and economic aspects of life in European cities. The principle focus will be the transition of medieval and early modern cities to modern metropolises, both spatially and socially. An additional theme will be urban development and concomitant social questions in non-European cities that were built either to serve expatriate Europeans or to emulate European modernity. Case studies may include London, Paris, Berlin, Vienna, Moscow, the provincial and national capitals of East-Central Europe, and cities in Africa, Asia, and Latin America. Offered as HSTY 345 and HSTY 445. Counts as SAGES Departmental Seminar.
HSTY 346. Guns, Germs, and Steel. 3 Units.
Jared Diamond's Guns, Germs, and Steel won the Pulitzer for non-fiction in 1998. Diamond, a physiologist, explains that Western Europe came to occupy and dominate large areas of the globe because of natural resources present in certain regions of the Old World since the end of the last Ice Age. Where a historian might look for answers in the written evidence left by historical individuals, Diamond examines ancient patterns of plant diffusion or the place of mountain ranges and deserts in the development of technologies. This seminar is about applying the history of a specific time and place namely North America from European contact to 1850 - to Diamond's general environmental explanations and models. Placing Diamond's broad explanations within specific historical contexts is revealing. A range of alternative methods, perspectives, primary sources from North America, and case studies (especially within environmental history) help develop a critical understanding of the complexities of European expansion into the New World. The course engages in an extended comparative exploration of the worldviews of different world cultures, most extensively comparing European worldviews with Native American, but also paying significant attention to Asian worldviews. The Native American cultures under consideration include those of both North and South America.

HSTY 348. History of Modern Political and Social Thought. 3 Units.
This course explores the responses of philosophers, economic theorists, culture critics, and public policy makers to changes in western society wrought by industrialization by focusing on their concerns with technological change. Offered as HSTY 348, HSTY 448 and POSC 348.

HSTY 351. Colonial America 1607-1763. 3 Units.
The formative years of American society and culture. Slavery and racism, expansionism, regionalism, the family, pluralism, sense of mission, and republican ideology.

HSTY 352. The Era of the American Revolution, 1763 - 1789. 3 Units.
This is an intensive survey of the Revolutionary period of American history, from the end of the French and Indian War in 1763 to the ratification of the U.S. Constitution in 1789, focusing especially on the underlying causes of the American Revolution, the chain of events leading to the Declaration of Independence, the war with England, the Constitutional Convention, and the ratification struggle that followed, with some background on the earlier period (1607-1763).

HSTY 353. Women in American History I. 3 Units.
The images and realities of women's social, political, and economic lives in early America. Uses primary documents and biographers to observe individuals and groups of women in relation to legal, religious, and social restrictions. Offered as HSTY 353, WGST 353, and HSTY 453.

HSTY 354. Women in American History II. 3 Units.
With HSTY 353, forms a two-semester introduction to women's studies. The politics of suffrage and the modern woman's efforts to balance marriage, motherhood, and career. (HSTY 353 not a prerequisite.) Offered as HSTY 354, WGST 354, and HSTY 454.

HSTY 355. Age of American Civil War 1815-80. 3 Units.
This course examines the causes and consequences of the Civil War, focusing on the rise of sectionalism, the dynamics of conflict, and reconstruction. Heavy emphasis is placed on archival research in relevant first person accounts from the period.

HSTY 356. Industrial America: 1880-1940. 3 Units.
This course will explore the history of the United States from 1880 to 1940 as the nation organized itself into a modern industrial society. We will examine the rise of a corporate and technological society, the development of cities and urban problems, the growth of government, and the way in which immigrants, women, and African-Americans negotiated a shifting social organization. This class will also focus on the growing dominance of consumerism and the cultural and intellectual critique of the changes that occurred during these events.

HSTY 358. America Since 1940. 3 Units.
This course will focus on the political, social, cultural, and economic changes that took place in the United States in the period spanning from the Great Depression to the present. Throughout the course, we will examine the challenges of pluralism, the position of the U.S. in the world, and the particular ways in which domestic conflict over such matters has shaped the contemporary United States.

HSTY 359. Books as Bombs: Books that Reshaped American Culture. 3 Units.
Every now and again a piece of prose profoundly reshapes American society and culture. In this advanced undergraduate seminar, students will read and discuss a selection of such works under the tutelage of Professors Shulman, a specialist in the History of Science and Technology, and Sentilles, who specializes in social and cultural history. The professors will set up the context of the work's publication or creation and then lead the class in a lively dissection of both the work and its impact. The main question asked of each book is "how and why did this work have such an effect?" In attempting to answer that question, students will come to a greater understanding of society that created and then responded to each work. Offered as HSTY 359 and HSTY 459. Counts as SAGES Departmental Seminar.

HSTY 361. Crime and Culture in Early America. 3 Units.
This course explores the intersection of crime, punishment, and popular culture in colonial British America and the early United States through 1860 by closely examining a series of popular crime genres, including execution sermons, criminal conversion narratives, criminal autobiographies, and trial reports. Readings in modern scholarship--drawing on several disciplines--will shed light on the popular literature and on underlying patterns of crime and punishment, while students will critically evaluate modern scholarly interpretations in light of the early crime publications. Types of crimes explored in the readings include witchcraft, piracy, burglary, robbery, and various types of murder, such as infanticide, familicide (cases of men murdering their wives and children), and sexual homicide. Each student will write several short analytical papers drawn from the shared readings and, at the end of the semester, produce an independent research paper. Offered as HSTY 361 and HSTY 461.

HSTY 363. Gender and Sexuality in America. 3 Units.
This multicultural seminar uses a mixture of historical text, gender theory, personal biography, and artistic expression to explore changing notions of gender and sexuality over the past two centuries in the United States. Offered as HSTY 363, HSTY 463 and WGST 363.

HSTY 366. Science, Technology, and Government. 3 Units.
Traces the development and influence of federal technology and science policies from colonial times to the present, with emphasis on the 20th century. Offered as HSTY 366 and POSC 365.
HSTY 371. Jews under Islam and Christianity. 3 Units.
This course examines the social and political status of Jews under Muslim and Christian rule since the Middle Ages. Themes include interfaith relations, Islamic and Christian beliefs regarding the Jews, Muslim and Christian regulation of Jewry, and the Jewish response. Offered as HSTY 371, JDST 371 and RLGN 371. Counts as SAGES Departmental Seminar.

HSTY 373. Women and Medicine in the United States. 3 Units.
Students in this seminar will investigate the experiences of American women as practitioners and as patients. We will meet weekly in the Dittrick Medical Museum for discussion of texts and use artifacts from the museum's collection. After a unit exploring how the female body was viewed by medical theorists from the Galenic period to the nineteenth-century, we will look at midwives, college-trained female doctors and nurses, and health advocacy among poor populations. We will then look at women's experiences in terms of menstruation, childbirth, and menopause, before exploring the cultural relationship between women and psychological disorders. Offered as HSTY 373, HSTY 473, and WGST 373.

HSTY 375. Advance Readings in Latin American History. 3 Units.
This course will introduce graduate students and upper level undergraduates to the most important debates in the field of Latin American History. It will provide an overview of the evolution of the (English language) historical literature on Latin America during the past three decades. It will also help students with a field in Latin American history prepare for their comprehensive examinations. The course readings have been chosen thematically and chronologically. Student will critically engage a group of monographs that stand out for their historiographical and methodological value and that will help illuminate the discussions and approaches that guide research in this field. Offered as HSTY 375 and HSTY 475. Counts as SAGES Departmental Seminar.

HSTY 378. North American Environmental History. 3 Units.
This course introduces major questions and approaches in the study of environmental history. Taking North American as our subject, we explore how humans have shaped the environment of the continent and how human history has, in turn been shaped by the natural world form antiquity to the present. Major topics include Pleistocene extinctions, the Columbian exchange, the market revolution in agriculture, American epidemics, industrialization, the origins of conservation, the environmental movement, and the globalization of America's environmental footprint. Offered as HSTY 378 and HSTY 468.

HSTY 380. The Sixties in America. 3 Units.
This course examines social, cultural, and political changes in the United States during the 1960s. We begin by examining the economic prosperity and "fragile" political consensus of the post-WWII period, as well as the undercurrent of poverty, dissent, and Cold War fears. We then cover the civil rights movement, student activism, the women's movement, the growth of Liberal America and the welfare state, the Vietnam War, the counterculture and conservative youth movements, the growth of a national consumer-driven, mass-mediated market, and the music, art, and pop culture--as well as their growing reliance on technological intervention--during this period of creative efflorescence. We will do this through reading books, but also through "reading" contemporary evidence of life in America, including listening to music, viewing films, analyzing pictures and artifacts.

HSTY 381. City as Classroom. 3 Units.
In this course, the city is the classroom. We will engage with the urban terrain. We will meet weekly off-campus, interact with community members, and interface--both literally and figuratively--with the city as a way to examine the linkages between historical, conceptual, and contemporary issues, with particular attention paid to race and class dynamics, inequality, and social justice. This course will have four intersecting components, primarily focusing on American cities since the 1930s: the social and physical construction of urban space, the built environment, life and culture in the city, and social movements and grassroots struggles. Offered as HSTY 381, POSC 381, SOCI 381, HSTY 481, POSC 481, and SOCI 481.

HSTY 383. Readings in PRC History. 3 Units.
This course examines the historiography of several key issues in the history of the People's Republic of China. Although the emphasis will be to explore at greater length and greater detail specific topics in post-1949 Chinese social, cultural, and political history, some topics will incorporate key historiographic works addressing the pre-1949 period as a point of comparison. We will explore the major historical transformations that led to a political break from China's imperial past, and we will examine both the continuities and discontinuities shaping China's experience as a modern nation during the latter half of the 20th century. Major themes covered include: the origins of the Chinese revolution, the Great Leap Forward, Cultural Revolution, rural-urban divide, the one-child policy, socialism with Chinese characteristics, et al.

HSTY 385. Readings in Society and Culture in Modern Chinese History. 3 Units.
The primary goal of this course is to provide students an opportunity to explore at greater length specific topics in Chinese social and cultural history. The period covered by the assigned readings roughly spans the late eighteenth century through the first half of the twentieth century. Readings will cover a wide range of topical themes, including childhood, gender and sexuality, urban life, print media, religion, and the environment. Offered as HSTY 385 and HSTY 485.

HSTY 387. Growing Up in America: 1607 - 2000. 3 Units.
Children have been growing up in the United States since it was declared independent, in 1776, but how adults conceive of (and therefore legislate and interpret) children and childhood constantly changes to fit current circumstances. The experiences of children themselves have varied not only in terms of race, class, gender, and religion but also depending on specific events (i.e., coming of age during the Civil War versus the Civil Rights movement) or geography (i.e., growing up in rural Hawaii vs. urban New Jersey). We cannot cover all of those histories in one course, so this seminar course instead focuses on exploring the interplay of ideas about children and the expressed or historical experiences of children. When the puritans and plantations members (slave, bonded and free) came to the Atlantic shore, they brought with them particular ideas about what is meant to be a child, and to experience childhood. They encountered already established residents who also had ideas about childhood. How did those concepts adjust/meld/contrast over time, and how do we see those ideas reflected or reshaped by actual experiences? This course engages particular lines of inquiry: How and why do understanding about what is "natural" for children change over time? How do variables like race, class, gender, etc., uphold effects the manifesting of such concepts? What is the role of the state in children's lives and how has that changed over time? What is the impact of mass culture on modern childhood?
HSTY 388. The United States in the World. 3 Units.
Traditional accounts of American history usually stay within the geographical boundaries of the modern United States. Recent historical research, however, has found that many well known events of the past, from the Revolution to Progressive Era social reforms to the environmental movement, make more sense when examined from a global perspective. Through approaches variously known as “transnational history,” “International history,” “global history,” and “borderlands history,” historians have come to redefine the United States’ role in the world. This course offers an introduction to this literature. Motivating questions range over time and topic: How were the Americans a product of Early Modern globalization? Was (or is) the United States an empire? How has the meaning of this term changed over time? What role have racial issues played in American involvement overseas as well as at home? How have the global flows of commodities shaped economic development? How was the American Civil War actually a global event? How was domestic social policy shaped by the exchange of ideas across the globe? How did American ideas about political rights and the consumer economy become globalized? How did Americans use new forms of media technologies to interpret and affect people from other parts of the world? This is not a course in the history of American diplomacy (though diplomacy will often come up), nor is it a history of American warfare abroad (though war, too, will often come up as well). Instead, it is a broad, thematic survey of the ways that American ideas, institutions, and people have shaped—and been shaped by—the rest of the world. Primary emphasis is placed on reading and discussing recent historical work: books and articles, but also essays, fiction, and visual art as well. Counts as SAGES Departmental Seminar.

HSTY 389. History of Zionism. 3 Units.
This course seeks to elucidate the major strands of Zionism, their origins, how they have interacted, and their impact on contemporary Israeli society. These may include political Zionism, cultural Zionism, socialist (labor) Zionism, Revisionist Zionism, and religious Zionism. This course will also examine the differences in the appeal of Zionism to Jews in different places, such as Western Europe, Eastern Europe and the United States. Offered as HSTY 389 and JDST 389. Counts as SAGES Departmental Seminar.

HSTY 390. Senior Research Seminars in History and Philosophy of Science. 3 Units.
Directed independent research seminar for seniors who are majors in the History and Philosophy of Science program. The goal of the course is to develop and demonstrate command of B.A.-level factual content, methodologies, research strategies, historiography, and theory relevant to the field of history of science and/or philosophy of science. The course includes both written and oral components. Offered as HSTY 380 and PHIL 390. Counts as SAGES Senior Capstone.

HSTY 391. Food in History. 3 Units.
Food is inextricably interconnected with the development of agriculture and other technologies, with the rise and fall of empires, with increasing understanding of diet and nutrition, with laws and regulations, with the arts, with economic development and consumer culture, and with religious and ethnic identities. By examining selective and representative episodes pertaining to each of these topics, this course explores the global history of food, from the agricultural revolution of the neolithic era to the consumer revolution of the last generation. Offered as HSTY 391 and HSTY 491.

HSTY 393. Advanced Readings in the History of Race. 3 Units.
This course examines the concept of race as a social construction that carries political and economic implications. We begin by examining the histories of the early racial taxonomists (e.g., Bernier, Linnaeus, and Blumenbach among others) and the contexts that informed their writings. We then assess how the concept of race changed from the nineteenth to the twentieth century in the United States. We conclude by evaluating how the ideology of race has influenced U.S. domestic life and foreign policy at specific historical moments. Offered as HSTY 393, HSTY 493, and ETHS 393.

HSTY 394. Seminar in Evolutionary Biology. 3 Units.
This seminar investigates 20th-century evolutionary theory, especially the Modern Evolutionary synthesis and subsequent expansions of and challenges to that synthesis. The course encompasses the multidisciplinary nature of the science of evolution, demonstrating how disciplinary background influences practitioners’ conceptualizations of pattern and process. This course emphasizes practical writing and research skills, including formulation of testable theses, grant proposal techniques, and the implementation of original research using the facilities on campus and at the Cleveland Museum of Natural History. Offered as ANTH 394, BIOL 394, EEPS 394, HSTY 394, PHIL 394, ANTH 494, BIOL 494, EEPS 494, HSTY 494, and PHIL 494.

HSTY 395. History of Medicine. 3 Units.
This course treats selected topics in the history of medicine, with an emphasis on social and cultural history. Focusing on the modern period, we examine illnesses, patients, and healers, with attention to the ways sickness and medicine touch larger questions of politics, social relations and identity. Offered as HSTY 395 and HSTY 495.

HSTY 396. Advanced Topics in History. 3 Units.
Advanced topics in history, changing from semester to semester. The course provides students an opportunity to explore special themes or theoretical issues in history that are too briefly covered in broader surveys. Students may take this course more than once for credit, when different topics are covered. Offered as HSTY 396 and HSTY 496.

HSTY 397. Undergraduate Tutorial. 1 - 3 Unit.
Individual instruction with members of the history faculty. Recommended preparation: 12 hours of History.

HSTY 398. Senior Research Seminar. 3 Units.
Training in the nature and methods of historical writing and research. Counts as SAGES Senior Capstone. Prereq: Majors only, Senior standing.

HSTY 399. Advanced Readings in Black History. 3 Units.
This is an advanced readings course that may change from semester to semester. This course will provide students with an opportunity to more deeply explore special themes and theoretical issues in the field of black history that are often quickly and briefly covered in broad survey courses. Readings may be organized around specific topics such as resistance and social protest, black intellectual history, black nationalism and identity, black film and historical literacy black cultural forms and politics, black urban history, or some such other combination. Students may take this course more than once and receive credit as long as the course topic differs. Students should contact the History Department for more details on course content during any given semester. Offered as ETHS 391, HSTY 399 and HSTY 499.

HSTY 400. Graduate Topical Seminar. 3 Units.
A rotating graduate seminar, offered every semester by a different faculty member. Each semester focuses on a topic of central historiographical or methodological importance. Prereq: Graduate standing or instructor permission.
HSTY 402. Introduction to Historiography of Science. 3 Units.
A graduate-level historiographic review of the history of the sciences from the seventeenth century to the present. Prereq: Graduate standing or instructor permission.

HSTY 404. Introduction to the Nonprofit Sector. 3 Units.
The United States has by far the largest and most important "nonprofit sector" in the world, a sector consisting of voluntary non-governmental organizations that provide health care, education and social services as well as arts, religious, and advocacy activities. Using mostly primary sources, this course considers the significance of the nonprofit sector in the U.S., its advantages and disadvantages, its uses for different groups of Americans, and current trends. Students have the option of writing either a standard term paper, or a study of strategic challenges facing a contemporary nonprofit organization. Offered as HSTY 204 and HSTY 404. Counts as SAGES Departmental Seminar. Prereq: Graduate standing or instructor permission.

HSTY 406. History of Museums: Theory and Reality. 3 Units.
This course is an intensive summer internship (10 hours per week) at the Western Reserve Historical Society, complemented by extensive readings in museum/archival theory and public historical perception. It is designed both to introduce students to museum/archival work and to compare theoretical concepts with actual museum situations. Interns will be assigned a specific project within one of the Society's curatorial or administrative divisions, but will have the opportunity to work on ancillary tasks throughout the Historical Society's headquarters in University Circle. Offered as HSTY 306 and HSTY 406. Prereq: Graduate standing or instructor permission.

HSTY 407. Development of Chemistry and Chemical Engineering. 3 Units.
The development of chemical ideas; theories of matter, composition, structure, and reaction; the application of chemistry and chemical theory from antiquity to the 20th century; all considered in social context. Recommended preparation: One year of college chemistry. Offered as: HSTY 307 and HSTY 407.

HSTY 410. Seminar: Early American Historiography. 3 Units.
This seminar examines the historiography of early America. It is designed to acquaint history doctoral students with the major themes, methods, and scholars of American history from the seventeenth century to the mid-nineteenth century. Students will be expected to read and report on major works in the field. Prereq: Graduate standing or instructor permission.

HSTY 411. Seminar: Modern American Historiography. 3 Units.
This seminar examines the approaches that professional historians of the United States have taken to the writing of American history in the past fifty years, with emphasis on changes in historical concerns, master debates among historians, and contemporary interests. Topics covered include national politics and government, economic development, social history, the history of ethnicity, race, and gender, and foreign policy and international relations. Each student will read widely and will prepare a series of reports on selected books and authors. Offered as HSTY 311 and HSTY 411. Prereq: Graduate standing or instructor permission.

HSTY 427. Comparative Environmental History. 3 Units.
Environmental history is the study of how humans have influenced the environments around them and how the environment itself has influenced the course of human societies. This course provides students with the skill to identify and analyze these interactions. It introduces course participants to the main themes of environmental history literature and the driving questions guiding environmental history research by examining case studies drawn around the globe, including Pre-Columbian America, Medieval Japan, Colonial Africa, and Modern Germany. This course will help course participants recognize the important patterns and developments that have led to present day human-environmental relationships. Offered as HSTY 327 and HSTY 427. Prereq: Graduate standing or instructor permission.

HSTY 428. Comparative Perspectives on Museum and Archive History and Practice. 3 Units.
Comparative Perspectives on Archives and Museum History and Practice is a distance learning based course shared with students at Bilkent University in Ankara, Turkey. The course focuses on a comparison of the history and development of archives and museums in the United States and in late Ottoman and Republican Turkey. Topics considered include the "ownership" of culture; state vs. private control of heritage; marketing of museums; and the impact of evolving technologies on the presentation and preservation of culture. Students work together via a shared, live lecture format. In addition to the instructor, museum and archive professionals from both the US and Turkey provide lectures and lead discussions during the semester. The primary intellectual product of the course is a final paper/project which compares the history, operational structure, and mission of a museum/archive in the US with a similar institution in Turkey. The paper/project is created by collaborative effort between a student at CWRU and one at Bilkent. Provided grant funding is available, the course may involve exchange visits to Turkey and the US. Offered as HSTY 328 and HSTY 428.

HSTY 429. Museums and Globalization. 3 Units.
Museums are everywhere contested spaces today. Historically designed as symbols of power, centers for research, agents of public education and community formation in Western industrial societies, they have become sites of development and cultural controversy on a global scale. From Cleveland and Paris to Nairobi and Dubai museums figure in urban redevelopment, national identity formation, conflicts between religion and science, and global tourism. Questions we will consider in this course: what are the fundamental features of museums as institutions? what ties have linked them to wider national and international communities of academics, NGO's and business? to political, economic and social concerns? how do museums in Asia, Africa, the Middle East, and Latin America figure in the current international contention over heritage rights? This is an innovative course allowing students to collaborate on projects, engage with guest lecturers and access museums across the globe. The course is organized in three parts: Part I: National Identity Building and Museums; Part II: Museums and Identity Politics; Part III: Museums and Global Development. Offered as HSTY 329, ARTH 301, HSTY 429, and ARTH 401. Prereq: Graduate standing or instructor permission.
HSTY 430. A History of Workers in the United States. 3 Units.
This course examines the experience of working people in the United States with an emphasis on twentieth-century social movements. It explores the lives of the women and men, skilled and unskilled, and rural and urban laborers that produce the goods and provide the services that society consumes. At crucial moments, working people have created or helped sustain national social movements in an effort to improve some aspect of their lives. We therefore will assess laborers in relation to several known and less known American social movements, such as the eight-hour day movement during the late nineteenth century, the peace movement during WWI, and the Civil Rights movement in the wake of WWII. Throughout the course we will also discuss the politics of time-managed work; the influence of public policy and government institutions; the role of unions within a competitive market economy; the relationship between industrial economies and functional blue-collar communities; and the correlation between immigration and globalization. Offered as HSTY 340, HSTY 430, and ETHS 340. Counts as SAGES Departmental Seminar.

HSTY 440. Science and Society Through Literature. 3 Units.
This course will examine the interaction of scientific investigation and discovery with the society it occurred in. What is the effect of science on society and, as importantly, what is the effect of society on science? An introduction will consider the heliocentric controversy with focus on Galileo. Two broad areas, tuberculosis and the Frankenstein myth, will then be discussed covering the period 1800-present. With tuberculosis, fiction, art and music will be examined to understand the changing views of society towards the disease, how society’s perception of tuberculosis victims changed, and how this influenced their treatments and research. With Frankenstein, the original novel in its historical context will be examined. Using fiction and film, the transformation of the original story into myth with different connotations and implications will be discussed. Most classes will be extensive discussions coupled with student presentations of assigned materials. Offered as PHRM 340, BETH 440, PHRM 440, and HSTY 440.

HSTY 442. Water. 3 Units.
This seminar will explore the history of the meaning of water—that is, the social, cultural, and/or political significance placed on water by individuals and governments in different times and places. It will also examine how humans have acted upon water, and how it has acted upon humans, with great consequences for human life. This seminar will look at the history of water in the context of science, technology and society; public health; political science; and environmental history. Case studies will be drawn from a wide chronological and geographical range; from the ancient world to Renaissance Italy, nineteenth century India, modern Britain, Egypt, and the U.S. The course provides a wide perspective on the history of human-water interactions, but will also focus closely on some critical cases. Seminar participants will write a research paper on the topic of their choice in the environmental history of water. Offered as: HSTY 342, HSTY 442, POSC 342, POSC 442.

HSTY 445. The European City. 3 Units.
An examination of architectural, social, cultural, philosophical, political, and economic aspects of life in European cities. The principle focus will be the transition of medieval and early modern cities to modern metropolises, both spatially and socially. An additional theme will be urban development and concomitant social questions in non-European cities that were built either to serve expatriate Europeans or to emulate European modernity. Case studies may include London, Paris, Berlin, Vienna, Moscow, the provincial and national capitals of East-Central Europe, and cities in Africa, Asia, and Latin America. Offered as HSTY 345 and HSTY 445. Counts as SAGES Departmental Seminar.

HSTY 448. History of Modern Political and Social Thought. 3 Units.
This course explores the responses of philosophers, economic theorists, culture critics, and public policy makers to changes in western society wrought by industrialization by focusing on their concerns with technological change. Offered as HSTY 348, HSTY 448 and POSC 348.

HSTY 451. History of European Technology. 3 Units.
A graduate-level, research seminar on the history of European technology from the Industrial Revolution to the present. Special emphasis is on social history of technology with a transatlantic view. The themes of the seminar vary from year to year, but include: communications, industrialization, control, cultural and intellectual approaches to the history of technology. Required work includes a research paper based on original sources. Prereq: Graduate standing or instructor permission.

HSTY 452. Readings in the History of American Technology. 3 Units.
A graduate-level review of the history of American technology. Prereq: Graduate standing or instructor permission.

HSTY 453. Women in American History I. 3 Units.
The images and realities of women’s social, political, and economic lives in early America. Uses primary documents and biographers to observe individuals and groups of women in relation to legal, religious, and social restrictions. Offered as HSTY 353, WGST 353, and HSTY 453. Prereq: Graduate standing or instructor permission.

HSTY 454. Women in American History II. 3 Units.
With HSTY 353, forms a two-semester introduction to women's studies. The politics of suffrage and the modern woman’s efforts to balance marriage, motherhood, and career. (HSTY 353 not a prerequisite.) Offered as HSTY 354, WGST 354, and HSTY 454. Prereq: Graduate standing or instructor permission.

HSTY 459. Books as Bombs: Books that Reshaped American Culture. 3 Units.
Every now and again a piece of prose profoundly reshapes American society and culture. In this advanced undergraduate seminar, students will read and discuss a selection of such works under the tutelage of Professors Shulman, a specialist in the History of Science and Technology, and Sentilles, who specializes in social and cultural history. The professors will set up the context of the work’s publication or creation and then lead the class in a lively dissection of both the work and its impact. The main question asked of each book is “how and why did this work have such an effect?” In attempting to answer that question, students will come to a greater understanding of society that created and then responded to each work. Offered as HSTY 359 and HSTY 459. Counts as SAGES Departmental Seminar.

HSTY 461. Crime and Culture in Early America. 3 Units.
This course explores the intersection of crime, punishment, and popular culture in colonial British America and the early United States through 1860 by closely examining a series of popular crime genres, including execution sermons, criminal conversion narratives, criminal autobiographies, and trial reports. Readings in modern scholarship—drawing on several disciplines—will shed light on the popular literature and on underlying patterns of crime and punishment, while students will critically evaluate modern scholarly interpretations in light of the early crime publications. Types of crimes explored in the readings include witchcraft, piracy, burglary, robbery, and various types of murder, such as infanticide, familicide (cases of men murdering their wives and children), and sexual homicide. Each student will write several short analytical papers drawn from the shared readings and, at the end of the semester, produce an independent research paper. Offered as HSTY 361 and HSTY 461. Prereq: Graduate standing or instructor permission.
HSTY 463. Gender and Sexuality in America. 3 Units.
This multicultural seminar uses a mixture of historical text, gender theory, personal biography, and artistic expression to explore changing notions of gender and sexuality over the past two centuries in the United States. Offered as HSTY 363, HSTY 463 and WGST 363.

HSTY 468. North American Environmental History. 3 Units.
This course introduces major questions and approaches in the study of environmental history. Taking North American as our subject, we explore how humans have shaped the environment of the continent and how human history has, in turn been shaped by the natural world from antiquity to the present. Major topics include Pleistocene extinctions, the Columbian exchange, the market revolution in agriculture, American epidemics, industrialization, the origins of conservation, the environmental movement, and the globalization of America's environmental footprint. Offered as: HSTY 378 and HSTY 468. Prereq: Graduate standing or instructor permission.

HSTY 470. Historiography, Method, and Theory. 3 Units.
a graduate level survey of fundamental themes in historiography, method, and theory, as well as interdisciplinary methods and theories. Prereq: Graduate standing or instructor permission.

HSTY 473. Women and Medicine in the United States. 3 Units.
Students in this seminar will investigate the experiences of American women as practitioners and as patients. We will meet weekly in the Dittrick Medical Museum for discussion of texts and use artifacts from the museum's collection. After a unit exploring how the female body was viewed by medical theorists from the Galenic period to the nineteenth-century, we will look at midwives, college-trained female doctors and nurses, and health advocacy among poor populations. We will then look at women's experiences in terms of menstruation, childbirth, and menopause, before exploring the cultural relationship between women and psychological disorders. Offered as HSTY 373, HSTY 473, and WGST 373. Prereq: Graduate standing or instructor permission.

HSTY 475. Advance Readings in Latin American History. 3 Units.
This course will introduce graduate students and upper level undergraduates to the most important debates in the field of Latin American History. It will provide an overview of the evolution of the (English language) historical literature on Latin America during the past three decades. It will also help students with a field in Latin American history prepare for their comprehensive examinations. The course readings have been chosen thematically and chronologically. Student will critically engage a group of monographs that stand out for their historiographical and methodological value and that will help illuminate the discussions and approaches that guide research in this field. Offered as HSTY 375 and HSTY 475. Counts as SAGES Departmental Seminar.

HSTY 476. Seminar in Comparative History. 3 Units.
An introduction to comparative method for historians. The topics will vary year to year, but the course will require exposure to historical contexts outside of the United States. Prereq: Graduate standing or instructor permission.

HSTY 477. Modern Policy History of the United States. 3 Units.
This course offers a historical perspective on policy and policy making in the United States since the late nineteenth century. It emphasizes the increasing role of the federal government, the persisting importance of the states, the significance of the courts, the revolutionary impact of the women's and civil rights movements, and the consequences of the growth and transformation of the American economy. Each student selects a policy area for detailed exploration; students often choose topics related to civil rights, women's rights, health care, environmental reform, non-profit and non-governmental organizations, the arts, and education, but other topics are also appropriate. Prereq: Graduate standing or instructor permission.

HSTY 479. Historical Research and Writing. 3 Units.
Research seminar for graduate students. Intensive focus on processes of historical research and writing. Students produce conference paper and research paper based on primary sources. Prereq: Graduate standing or instructor permission.

HSTY 481. City as Classroom. 3 Units.
In this course, the city is the classroom. We will engage with the urban terrain. We will meet weekly off-campus, interact with community members, and interface--both literally and figuratively--with the city as a way to examine the linkages between historical, conceptual, and contemporary issues, with particular attention paid to race and class dynamics, inequality, and social justice. This course will have four intersecting components, primarily focusing on American cities since the 1930s: the social and physical construction of urban space, the built environment, life and culture in the city, and social movements and grassroots struggles. Offered as HSTY 381, POSC 381, SOCI 381, HSTY 481, POSC 481, and SOCI 481.

HSTY 485. Readings in Society and Culture in Modern Chinese History. 3 Units.
The primary goal of this course is to provide students an opportunity to explore at greater length specific topics in Chinese social and cultural history. The period covered by the assigned readings roughly spans the late eighteenth century through the first half of the twentieth century. Readings will cover a wide range of topical themes, including childhood, gender and sexuality, urban life, print media, religion, and the environment. Offered as HSTY 385 and HSTY 485.

HSTY 491. Food in History. 3 Units.
Food is inextricably interconnected with the development of agriculture and other technologies, with the rise and fall of empires, with increasing understanding of diet and nutrition, with laws and regulations, with the arts, with economic development and consumer culture, and with religious and ethnic identities. By examining selective and representative episodes pertaining to each of these topics, this course explores the global history of food, from the agricultural revolution of the neolithic era to the consumer revolution of the last generation. Offered as HSTY 391 and HSTY 491. Prereq: Graduate standing or instructor permission.

HSTY 493. Advanced Readings in the History of Race. 3 Units.
This course examines the concept of race as a social construction that carries political and economic implications. We begin by examining the histories of the early racial taxonomists (e.g., Bernier, Linnaeus, and Blumenbach among others) and the contexts that informed their writings. We then assess how the concept of race changed from the nineteenth to the twentieth century in the United States. We conclude by evaluating how the ideology of race has influenced U.S. domestic life and foreign policy at specific historical moments. Offered as HSTY 393, HSTY 493, and ETHS 393.
HSTY 494. Seminar in Evolutionary Biology. 3 Units.
This seminar investigates 20th-century evolutionary theory, especially the Modern Evolutionary synthesis and subsequent expansions of and challenges to that synthesis. The course encompasses the multidisciplinary nature of the science of evolution, demonstrating how disciplinary background influences practitioners' conceptualizations of pattern and process. This course emphasizes practical writing and research skills, including formulation of testable theses, grant proposal techniques, and the implementation of original research using the facilities on campus and at the Cleveland Museum of Natural History. Offered as ANTH 394, BIOL 394, EEPS 394, HSTY 394, PHIL 394, ANTH 494, BIOL 494, EEPS 494, HSTY 494, and PHIL 494.

HSTY 495. History of Medicine. 3 Units.
This course treats selected topics in the history of medicine, with an emphasis on social and cultural history. Focusing on the modern period, we examine illnesses, patients, and healers, with attention to the ways sickness and medicine touch larger questions of politics, social relations, and identity. Offered as HSTY 395 and HSTY 495. Prereq: Graduate standing or instructor permission.

HSTY 496. Advanced Topics in History. 3 Units.
Advanced topics in history, changing from semester to semester. The course provides students an opportunity to explore special themes or theoretical issues in history that are too briefly covered in broader surveys. Students may take this course more than once for credit, when different topics are covered. Offered as HSTY 396 and HSTY 496.

HSTY 497. Graduate Independent Study. 1 - 3 Unit.
Independent reading and research programs with individual members of the faculty.

HSTY 499. Advanced Readings in Black History. 3 Units.
This is an advanced readings course that may change from semester to semester. This course will provide students an opportunity to more deeply explore special themes and theoretical issues in the field of black history that are often quickly and briefly covered in broad survey courses. Readings may be organized around specific topics such as resistance and social protest, black intellectual history, black nationalism and identity, black film and historical literacy, black cultural forms and politics, black urban history, or some such other combination. Students may take this course more than once and receive credit as long as the course topic differs. Students should contact the History Department for more details on course content during any given semester. Offered as ETHS 391, HSTY 399 and HSTY 499. Prereq: Graduate standing or instructor permission.

HSTY 525. Intellectual Property and the Construction of Authorship. 3 Units.
Study of the concepts, laws, norms, and practices through which writers and other creative producers establish "property" in their work. Offered as ENGL 525 and HSTY 525. Prereq: Graduate standing or permission.

HSTY 601. Independent Studies. 1 - 18 Unit.
(Credit as arranged.)

HSTY 651. Thesis M.A.. 1 - 18 Unit.
(Credit as arranged.)

HSTY 701. Dissertation Ph.D.. 1 - 9 Unit.
(Credit as arranged.) Limited to Ph.D. candidates actively engaged in the research and writing of their dissertations. Prereq: Predoctoral research consent or advanced to Ph.D. candidacy milestone.

History and Philosophy of Science Program

The Department of Philosophy and the Department of History together offer an undergraduate major in the history and philosophy of science. The purpose of the major is to develop a humanistic understanding of the nature and development of science through the combined use of philosophical and historical methods. The major provides a foundation for graduate study in a range of academic disciplines and for careers in such areas as business, medicine, law, public policy, and science journalism. It also may be profitably combined with a program in one of the sciences. Within the major, a student may seek an emphasis on the philosophy of science, the history of the physical sciences, or the history of the biological and medically related sciences.

Undergraduate Programs

Major

The history and philosophy of science major requires 30 credit hours from courses in philosophy and in history of science and technology:

Any four of the following seven classes: 12

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL 101</td>
<td>Introduction to Philosophy</td>
</tr>
<tr>
<td>HSTY 151</td>
<td>Technology in European Civilization</td>
</tr>
<tr>
<td>HSTY 201</td>
<td>Science in Western Thought I</td>
</tr>
<tr>
<td>HSTY 202</td>
<td>Science in Western Thought II</td>
</tr>
<tr>
<td>HSTY/PHIL 203</td>
<td>Natural Philosophy I</td>
</tr>
<tr>
<td>PHIL 204/ HSTY 207</td>
<td>Natural Philosophy II</td>
</tr>
<tr>
<td>PHIL 302</td>
<td>Modern Philosophy</td>
</tr>
<tr>
<td>HSTY/PHIL 390</td>
<td>Senior Research Seminars in History and Philosophy of Science</td>
</tr>
</tbody>
</table>

Five electives approved by the major advisor 15

Total Units 30

Students who major in the history and philosophy of science are not permitted to take a second major in philosophy or to minor in philosophy.

Minor

Students who minor in history and philosophy of science are required to complete 15 credit hours, as follows:

Any three of the following five classes: 9

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL 101</td>
<td>Introduction to Philosophy</td>
</tr>
<tr>
<td>HSTY 202</td>
<td>Science in Western Thought II</td>
</tr>
<tr>
<td>HSTY/PHIL 203</td>
<td>Natural Philosophy I</td>
</tr>
<tr>
<td>HSTY 207/ PHIL 204</td>
<td>Natural Philosophy II</td>
</tr>
<tr>
<td>PHIL 302</td>
<td>Modern Philosophy</td>
</tr>
</tbody>
</table>

Two electives approved by the minor advisor 6

Total Units 15
Department Faculty

Colin McLarty, PhD
Truman P. Handy Professor of Philosophy; Director, History and Philosophy of Science Program

James M. Edmonson, PhD
Adjunct Associate Professor, Department of History; Director, Dittrick Medical History Center

Chris Haufe, PhD
Assistant Professor, Department of Philosophy

Miriam R. Levin, PhD
Professor, Department of History

Alan J. Roeke, PhD
Distinguished University Professor and Henry Eldridge Bourne Professor of History

Jonathan Sadowsky, PhD
Theodore J. Castele Professor; Associate Professor, Department of History

International Studies Program

By completing a major in international studies, students develop expertise in a region of the world, including one of its languages, and in a transnational topic. They also become familiar with a variety of international issues and frameworks. They use this expertise and knowledge to understand and analyze the dynamics and complexity of the human world.

Popular transnational topics include international security and diplomacy, global environment, international development, global health, international business, intercultural communications, international trade and finance, global arts, and international law. Common languages to study are Arabic, French, German, Italian, Japanese, Mandarin, Russian, and Spanish.

Students majoring in international studies earn a BA degree. The major is useful for careers in the arts, business, engineering, government, health, law, media, and the nonprofit sector, among other fields.

Undergraduate Program

Major

The major in international studies requires a minimum of 33 credit hours, chosen from approved topical and area studies courses, plus satisfaction of a language competency requirement. Each student will prepare a program of study that includes course selections meeting the seven requirements below. Normally, no more than two courses taken for international studies credit may count simultaneously toward a minor or another major. Courses taken to satisfy the language competency requirement are exempted from this rule, and several international studies courses contribute to the completion of general education requirements.

Requirements for the Major

1. Multidisciplinary Foundations (required courses; 12 hours). These courses provide an introduction to understandings of society and culture, principles of economics, change over time, and interactions among countries, while exposing students to a variety of world societies and issues. International studies majors will be expected to have completed the multidisciplinary foundations courses before embarking on a study abroad program. These courses are:

   ANTH 102 Being Human: An Introduction to Social and Cultural Anthropology

   ECON 103 Principles of Macroeconomics (*)

   HSTY 113 Introduction to Modern World History

   POSC 172 Introduction to International Relations

   * Students who matriculated prior to Fall 2014 can use ECON 102 Principles of Microeconomics, rather than ECON 103 Principles of Macroeconomics, for the economics course, in accordance with the previous major requirements.

2. Area Focus (6 hours): Two courses that concentrate on a single region of the world. Such courses are offered in many departments and programs. In order to count toward the area focus, courses from the Department of Modern Languages and Literatures must include content other than exclusively language learning, such as the study of literature or cinema. Area foci include Africa, Asia, Europe, Latin America, and the Middle East.

3. Topical Focus (6 hours): A related pair of courses that examine a transnational topic. Topical foci include, but are not limited to, international security and diplomacy, global environment, international trade and finance, global health, international development, and global arts.

4. Elective Area or Topical Courses (6 hours): Two additional courses toward the area focus or topical focus.

5. Students must include courses from at least two different departments or programs among their six area focus, topical focus, and elective courses. (This is highly recommended, but not required, for students who matriculated prior to Fall 2014.) These courses should be selected in consultation with the international studies director.

6. Senior Project (required course, 3 hours): The senior project offers students the opportunity to demonstrate their understanding of the complexity and dynamics of the human world as a result of majoring in international studies. Students who matriculated Fall 2014 or later complete INTL 399 International Studies Colloquium if it is offered their senior fall. Otherwise, those students must complete INTL 398 International Studies Senior Research Project. Students who matriculated before Fall 2014 must complete INTL 398.

INTL 398 International Studies Senior Research Project: Students work individually with a faculty project advisor to research and write a major paper, typically in their senior year. Students should identify their faculty project advisors and topics no later than the second week of the semester. Upon request to the international studies director, who seeks approval from the director of SAGES, this course can meet the requirements of a SAGES capstone.

INTL 399 International Studies Colloquium: Students analyze topics relevant to the foreign geographic area and broad theme they have chosen for their major foci. To do so, they draw on their international experience, knowledge acquired through a foreign language, and prior coursework for the major. Students share their conclusions in the seminar itself and in a public presentation. This course meets the requirements of a SAGES capstone.
To further foster the students' linguistic and cultural development, the flexibility that allows individuals to pursue their own areas of interest. Interdisciplinary perspectives, while at the same time maintaining a Japanese Studies Program seeks to foster the student's global and understanding through interdisciplinary study. Following this thread, the centers on the Asian mainland and surrounding Pacific islands and receiving, reworking, and incorporating influences from nearby cultural ethnic, multi-religious, multicultural contexts. Through a long history of Today's students find themselves in a world of increasingly multi-

Faculty

Kelly McMann, PhD
(University of Michigan)
Associate Professor, Department of Political Science; Director, International Studies Program

Courses

INTL 396. International Independent Study. 1 - 3 Unit.
Study of a topic within the scope of international studies. The student must complete a prospectus form, approved and signed by the supervising faculty member, no later than the second week of classes. The prospectus must outline the goals of the project and the research methodology to be used and is part of the basis for grading. Open to juniors and seniors majoring in international studies.

INTL 398. International Studies Senior Research Project. 3 Units.
Individual work with a faculty tutor leading to the writing of a major research paper. Open only to seniors majoring in international studies.

INTL 399. International Studies Colloquium. 3 Units.
This course offers seniors the opportunity to demonstrate their understanding of the complexity and dynamics of the human world as a result of majoring in International Studies. Students analyze topics relevant to the foreign geographic areas and broad themes they have chosen for their major foci. To do so, they draw on their international experiences, knowledge acquired through foreign languages, and prior coursework for the major. Students share their conclusions in the seminar itself and in a public presentation. This course meets the requirements of a SAGES capstone.

Japanese Studies Program

Today's students find themselves in a world of increasingly multi-ethnic, multi-religious, multicultural contexts. Through a long history of receiving, reworking, and incorporating influences from nearby cultural centers on the Asian mainland and surrounding Pacific islands and from the world beyond, including Europe and the Americas, Japan has developed a tradition of multiculturalism—a tradition that is best understood through interdisciplinary study. Following this thread, the Japanese Studies Program seeks to foster the student's global and interdisciplinary perspectives, while at the same time maintaining a flexibility that allows individuals to pursue their own areas of interest. To further foster the students' linguistic and cultural development, the Japanese Studies Program strongly encourages study abroad in Japan for a year, a semester, or a summer.

Students may pursue a major or a minor in Japanese studies. The program offers a variety of courses to fulfill the requirements, ranging from five levels of the Japanese language to courses about Japanese cinema, literature, and pop culture. Besides these core courses, we encourage the student to take related courses in such interdisciplinary areas as Asian art, cinema, comparative literature of Japan and the West, Japanese religion and history, and international business. Taking advantage of the varied resources of the University and University Circle institutions, the Japanese Studies Program makes the study of Japanese culture an integral part of the student's undergraduate education. Furthermore, the Japanese Studies Program provides an excellent foundation for graduate or professional school or for careers in international business and finance, careers involving technological or medical exchange, and careers in law, journalism, foreign service, or the arts.

Undergraduate Program

Major

The BA major in Japanese studies requires a minimum of 35 credit hours. For students beginning the major at the 200 level, the course requirements are as follows:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>JAPN 201</td>
<td>Intermediate Japanese I</td>
<td>4</td>
</tr>
<tr>
<td>JAPN 202</td>
<td>Intermediate Japanese II</td>
<td>4</td>
</tr>
<tr>
<td>JAPN 301</td>
<td>Advanced Japanese I</td>
<td>4</td>
</tr>
<tr>
<td>JAPN 302</td>
<td>Advanced Japanese II</td>
<td>4</td>
</tr>
<tr>
<td>JAPN 350</td>
<td>Contemporary Japanese Texts I</td>
<td>3</td>
</tr>
<tr>
<td>or JAPN 450</td>
<td>Japanese in Cultural Context I</td>
<td></td>
</tr>
<tr>
<td>JAPN 351</td>
<td>Contemporary Japanese Texts II</td>
<td>3</td>
</tr>
<tr>
<td>or JAPN 451</td>
<td>Japanese in Cultural Context II</td>
<td></td>
</tr>
<tr>
<td>JAPN 397</td>
<td>Senior Thesis I**</td>
<td>3</td>
</tr>
<tr>
<td>JAPN 398</td>
<td>Senior Thesis II**</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Four Asian studies, world literature, or other related courses.***</td>
<td>12</td>
</tr>
</tbody>
</table>

Total Units 40

* JAPN 450/451, if not taken as replacement(s) for JAPN 350/351, can be counted toward the four Asian studies, world literature, or other related courses.

** This course requires a substantial research paper in Japanese or English. Students are required to identify their faculty advisors and the topic of their paper by the end of the junior year. Exceptional papers may be considered for honors.

*** “Other related courses” may include courses in Japanese literature, film, theater, art history, anthropology, philosophy, religion, sociology, political science, or history.

Students beginning the major at the 300 level do not take JAPN 201 Intermediate Japanese I and JAPN 202 Intermediate Japanese II, but do take one “directed reading” in Japanese in an area related to their major research. All other requirements for the BA are the same.

Courses in other disciplines also form an important component of the Japanese Studies Program. They provide an international, as well as
interdisciplinary, perspective on Japanese culture. A faculty advisor supervises each student’s selection of these courses.

In addition to the courses required for the major, the following courses are offered in the Japanese Studies Program:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>JAPN/WLIT 225</td>
<td>Japanese Popular Culture</td>
<td>3</td>
</tr>
<tr>
<td>JAPN/WLIT 255</td>
<td>Modern Japanese Literature in Translation</td>
<td>3</td>
</tr>
<tr>
<td>JAPN/WLIT 245</td>
<td>Classical Japanese Literature in Translation</td>
<td>3</td>
</tr>
<tr>
<td>JAPN/WLIT 345</td>
<td>Japanese Women Writers</td>
<td>3</td>
</tr>
<tr>
<td>JAPN/WLIT 355</td>
<td>Modern Japanese Novels and the West</td>
<td>3</td>
</tr>
<tr>
<td>JAPN 399</td>
<td>Independent Study</td>
<td>1-3</td>
</tr>
</tbody>
</table>

Program Honors

Exceptional papers written for the senior thesis may qualify for program honors. In addition, to qualify for the BA with honors in Japanese, students must achieve a minimum GPA of 3.5 in courses taken for the Japanese major.

Study Abroad

A year of study in Japan is highly recommended, as is additional study in another language. All efforts are made to grant appropriate credit for courses taken at a Japanese university during the year abroad.

Minor

For students beginning Japanese at the introductory level, the course requirements for the minor are as follows:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>JAPN 101</td>
<td>Elementary Japanese I</td>
<td>4</td>
</tr>
<tr>
<td>JAPN 102</td>
<td>Elementary Japanese II</td>
<td>4</td>
</tr>
<tr>
<td>JAPN 201</td>
<td>Intermediate Japanese I</td>
<td>4</td>
</tr>
<tr>
<td>JAPN 202</td>
<td>Intermediate Japanese II</td>
<td>4</td>
</tr>
<tr>
<td>One 300-level course</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Units</td>
<td></td>
<td>19</td>
</tr>
</tbody>
</table>

For students beginning Japanese at the 200 level or above, the requirements for the minor are five courses at the 200 or above, through JAPN 450/451, approved by a program director.

Program Faculty

Linda C. Ehrlich, PhD
(University of Hawaii)
Associate Professor, Department of Modern Languages and Literatures; Co-Director, Japanese Studies Program

Takao Hagiwara, PhD
(University of British Columbia)
Associate Professor, Department of Modern Languages and Literatures; Co-Director, Japanese Studies Program

Margaret M. Fitzgerald, MA
(Ohio State University)
Full-time Lecturer, Department of Modern Languages and Literatures

Nana Onishi, MA
(University of Wisconsin, Madison)
Full-time Lecturer, Department of Modern Languages and Literatures

Yuki Togawa, MA
(Carnegie Mellon University)
Full-time Lecturer, Department of Modern Languages and Literatures

Program Advisory Committee

William E. Deal, PhD
(Harvard University)
Severance Professor in the History of Religion, Department of Religious Studies; Department of Cognitive Science

Courses

JAPN 101. Elementary Japanese I. 4 Units.
Introduction to understanding, speaking, reading, and writing Japanese. Students learn to read and write hiragana and katakana syllabaries and 50 kanji characters. Students are expected to achieve control of the sound system and basic structure of the language. Emphasizes aural comprehension and speaking.

JAPN 102. Elementary Japanese II. 4 Units.

JAPN 201. Intermediate Japanese I. 4 Units.
Further study of fundamental structures of Japanese. Students improve aural comprehension, speaking, reading, and writing abilities and learn approximately 100 new characters. Recommended preparation: JAPN 102 or equivalent.

JAPN 202. Intermediate Japanese II. 4 Units.
Continuation of JAPN 201. Students learn an additional 100 kanji characters. With the completion of JAPN 201 - 202, students should have control of the fundamentals of modern Japanese and a firm foundation in the writing system. Recommended preparation: JAPN 201 or equivalent.

JAPN 225. Japanese Popular Culture. 3 Units.
This course highlights salient aspects of modern Japanese popular culture as expressed in animation, comics and literature. The works examined include films by Hayao Miyazaki, writings by Kenji Miyazawa, Haruki Murakami and Banana Yoshimoto, among others. The course introduces students to essential aspects of modern Japanese popular culture and sensibility. Offered as JAPN 225 and WLIT 225.

JAPN 245. Classical Japanese Literature in Translation. 3 Units.
Readings, in English translation, of classical Japanese poetry, essays, narratives, and drama to illustrate essential aspects of Japanese culture and sensibility before the Meiji Restoration (1868). Lectures explore the sociohistorical contexts and the character of major literary genres; discussions focus on interpreting the central images of human value within each period. Japanese sensibilities compared to and contrasted with those of Western and other cultures. Offered as JAPN 245 and WLIT 245.

JAPN 255. Modern Japanese Literature in Translation. 3 Units.
Focus on the major genres of modern Japanese literature, including poetry, short story, and novel (shosetsu). No knowledge of Japanese language or history is assumed. Lectures, readings, and discussions are in English. Films and slides complement course readings. Offered as JAPN 255 and WLIT 255.
JAPN 301. Advanced Japanese I. 4 Units.
Emphasizes conversational proficiency and reading. Students must use the course material offered by the Online Language Learning Center in addition to class meetings. Recommended preparation: JAPN 202 or equivalent.

JAPN 302. Advanced Japanese II. 4 Units.
Continuation of JAPN 301; emphasizes conversational proficiency and reading. Japanese life and culture introduced through supplemental materials and activities. Students must use the course material offered by the Online Language Learning Center in addition to class meetings. Recommended preparation: JAPN 301 or equivalent.

JAPN 345. Japanese Women Writers. 3 Units.
Contributions of women writers to the literature of pre-modern and modern Japan; investigations of how their works exemplify and diverge from “mainstream” literary practices. Emphasis on the social and cultural contexts of the texts. Offered as JAPN 345 and WLIT 345.

JAPN 350. Contemporary Japanese Texts I. 3 Units.
The primary aim of this course is to develop communication skills in Japanese based on those that the students have acquired in JAPN 302 or equivalent. The students will read and discuss various texts such as daily conversations, essays, and news scripts with the assistance of vocabulary and kanji (Chinese character) lists and formal grammar explanations. Attention also will be given to enhancing the students’ writing and aural/oral proficiencies through regularly assigned homework, presentations, tape listening, video viewing, and classroom discussion. Recommended preparation: JAPN 302 or equivalent.

JAPN 351. Contemporary Japanese Texts II. 3 Units.
This course is a continuation of JAPN 350 and its primary aim overlaps with that of JAPN 350: to develop more sophisticated communication skills in Japanese. Students will read and discuss various texts such as daily conversations, essays, and news scripts largely with the assistance of vocabulary and kanji (Chinese character) lists. Attention will be given to enhancing the students’ writing and aural/oral proficiencies through regularly assigned homework, presentations, tape listening, video viewing, and classroom discussion. Prereq: JAPN 350 or consent of instructor.

JAPN 355. Modern Japanese Novels and the West. 3 Units.
This course will compare modern Japanese and Western novels, drama, and novels. Comparisons will focus on the themes of family, gender and alienation, which subsume a number of interrelated sub-themes such as marriage, home, human sexuality, amae (dependence), innocence, experience, death, God/gods, and nature (the ecosystem). Offered as JAPN 355, WLIT 355. Counts as SAGES Departmental Seminar.

JAPN 396. Senior Capstone - Japanese. 3 Units.
The Senior Capstone in Japanese is an independent study project chosen in consultation with a capstone advisor. The capstone project should reflect both the student’s interest within Japanese and the courses he or she has taken to fulfill the major. The project requires independent research using an approved bibliography and plan of action. In addition to written research, the student will also present the capstone project in a public forum that is agreed upon by the project advisor and the student. Counts as SAGES Senior Capstone. Prereq: Senior status required. Major in Japanese required.

JAPN 397. Senior Thesis I. 3 Units.
Intensive study of a literary, linguistic, or cultural topic with a faculty member, leading to the writing of a research paper in English or Japanese. Limited to senior majors. Permit required.

JAPN 398. Senior Thesis II. 3 Units.
Continuation of JAPN 397. Limited to senior majors. Prereq: JAPN 397.

JAPN 399. Independent Study. 1 - 3 Unit.
Directed study for students who have progressed beyond available course offerings.

JAPN 450. Japanese in Cultural Context I. 3 Units.
The primary aim of this graduate course is to develop sophisticated communication skills (listening, speaking, reading, and writing) in Japanese. The students will read and discuss various texts in the original, such as essays, news scripts, and literary works. Classroom instruction and discussion will be conducted in Japanese. The students also will be required to write a research paper of 4000-6000 letters/characters (10-15 genkoyoshi pages) in Japanese on a topic related to Japan and the student’s specialty. Recommended preparation: JAPN 351 or equivalent.

JAPN 451. Japanese in Cultural Context II. 3 Units.
This course is a continuation of JAPN 450 and it aims at a further development of sophisticated communication skills (listening, speaking, reading, and writing) in Japanese. The students will read and discuss various texts in the original, such as essays, news scripts, and literary works both classical and modern. Classroom instruction and discussion will be conducted in Japanese. The students also will be required to write a research paper of 6000-8000 letters/characters (15-20 genkoyoshi pages) in Japanese on a topic related to Japan and the student’s specialty. Recommended preparation: JAPN 450 or equivalent.

Judaic Studies Program

The Judaic Studies Program offers an interdisciplinary approach to the study of the history, religion, social experience, and culture of the Jewish people. By bringing a variety of fields and disciplines to bear on its subject, the program intends to convey to students the complex interaction of forces that create and express Jewish ethnic and religious identity. Students completing the program will have a broad knowledge of the field along with the tools necessary for continued study of Jewish civilization in all its manifestations.

Undergraduate Program

Minor

The minor consists of a minimum of five or six courses, according to the following scheme, to be chosen in consultation with the program director.

Required Courses:
A. Introduction to Judaic Studies 3
   JDST 201 Introduction to Judaic Studies

B. Nine additional credit hours of courses that have a JDST cross-listing. Alternatively, students may take six credit hours of JDST courses plus three credit hours from one course on the following list:
   ENGL 365E The Immigrant Experience
   HBRW 201 Intermediate Modern Hebrew I
   HBRW 202 Intermediate Modern Hebrew II
   HBRW 301 Advanced Modern Hebrew I
   HBRW 302 Advanced Modern Hebrew II
   HBRW 399 Independent Studies
   HSTY 257 Immigrants in America
   POSC 370K Nationalism, Ethnicity, and Religion in World Politics
   POSC 379 Introduction to Middle East Politics
and JDST 211. Project based on the assigned authors or readings. Offered as RLGN 211

The course will be conducted as a seminar, in which students will read religious poetry and other writings from the Middle Ages, and modern Scriptures (Hebrew Bible, New Testament, Quran) of each tradition, expressions until the present day. Readings include the foundational series of prophets including Noah, Abraham, and Moses. Each absorbed the philosophy and science of the Greco-Roman world and went on to influence and struggle with each other. Many of the religious traditions trace their roots to the faith of biblical Israel as revealed by a region and the religious communities in it, virtually every act and every.shapes, our construction of American Selves vs. Ethnic Others.

This course surveys the history of Jews in Europe and the wider world from the Spanish expulsion through the French Revolution. Tracking peregrinations out of the Iberian Peninsula to the British Isles, France, Holland, Italy, Germany, Poland-Lithuania, the Ottoman Empire, and the American colonies, it examines the diverse ways Jews organized their communities, interacted with their non-Jewish neighbors, and negotiated their social, economic, and legal status within different states and empires. What role did Jews play and what symbolic place did they occupy during a period of European expansion, technological innovation, artistic experimentation, and religious and political turmoil? What internal and external dynamics affected Jewish experiences in the sixteenth, seventeenth, and eighteenth centuries? Through a selection of inquisitorial transcripts, government records, memoirs, and historical literature, we will explore topics such as persecution, conversion, messianism, toleration, emancipation, and assimilation. Offered as HSTY 218, JDST 218, and ETHS 218. Counts as SAGES Departmental Seminar.

JDST 201. Introduction to Judaic Studies. 3 Units.

An introduction to the academic study of Judaic religion and culture, this course does not presuppose any previous study of, or experience with, Judaism. The course takes an interdisciplinary approach, drawing on a variety of methods to examine the diverse issues that make up the current field of Judaic Studies. The course will examine the Jewish experience across time and space, and may include some "field" experience, such as a visit to a synagogue or to the Maltz Museum of Jewish Heritage. Required for the minor in Judaic Studies.

JDST 208. Introduction to Western Religions. 3 Units.

Basic introduction to the three great monotheistic religions of the Western World: Christianity, Judaism, and Islam. All three of these religious traditions trace their roots to the faith of biblical Israel as revealed by a series of prophets including Noah, Abraham, and Moses. Each absorbed the philosophy and science of the Greco-Roman world and went on to influence and struggle with each other. Many of the religious problems of the contemporary world, from Afghanistan to the Middle East to Yugoslavia, can be traced to tension within and between these religious groups. Offered as RLGN 208 and JDST 208. Counts as SAGES Departmental Seminar.

JDST 211. Great Books of Western Religion. 3 Units.

Students will engage with the major writings that have shaped Western religious traditions (Christianity, Judaism, Islam) from their earliest expressions until the present day. Readings include the foundational Scriptures (Hebrew Bible, New Testament, Quran) of each tradition, religious poetry and other writings from the Middle Ages, and modern writers on spiritually and religiousness within each of these traditions. The course will be conducted as a seminar, in which students will read the selected original texts and will discuss their religious and spiritual meaning and significance in class. Each student will also prepare a final project based on the assigned authors or readings. Offered as RLGN 211 and JDST 211.

JDST 218. Jews in Early Modern Europe. 3 Units.

This course surveys the history of Jews in Europe and the wider world from the Spanish expulsion through the French Revolution. Tracking peregrinations out of the Iberian Peninsula to the British Isles, France, Holland, Italy, Germany, Poland-Lithuania, the Ottoman Empire, and the American colonies, it examines the diverse ways Jews organized their communities, interacted with their non-Jewish neighbors, and negotiated their social, economic, and legal status within different states and empires. What role did Jews play and what symbolic place did they occupy during a period of European expansion, technological innovation, artistic experimentation, and religious and political turmoil? What internal and external dynamics affected Jewish experiences in the sixteenth, seventeenth, and eighteenth centuries? Through a selection of inquisitorial transcripts, government records, memoirs, and historical literature, we will explore topics such as persecution, conversion, messianism, toleration, emancipation, and assimilation. Offered as HSTY 218, JDST 218, and ETHS 218. Counts as SAGES Departmental Seminar.

JDST 220. Jewish Traditional Art and Architecture. 3 Units.

Tradition and transformation in Jewish artistic expression over time and across space. Course will begin with biblical period and continue down to the present day in Israel and America. Examination of how concepts such as "Jewish" and "art" undergo change within the Jewish community over this period. Offered as ARTH 220 and JDST 220.

JDST 223. Religious Roots of Conflict in the Middle East. 3 Units.

The course is about the rhetoric and symbols used by various voices in the Middle East in the ongoing debate about the future shape of the region. For historical and cultural reasons, much of the discourse draws on religious symbolism, especially (although not exclusively) Islamic, Jewish and Christian. Because of the long and complex history of the region and the religious communities in it, virtually every act and every place is fraught with meaning. The course examines the diverse symbols and rhetorical strategies used by the various sides in the conflict and how they are understood both by various audiences within each community and among the different communities. Offered as JDST 223 and RLGN 223. Counts as SAGES Departmental Seminar.

JDST 228. The Jewish Image in Popular Film. 3 Units.

Explores film as social practice for its makers and its audience from the silent era through Hollywood’s Golden Age, to the technological dazzle of the present day. Notes views of the Jews as stereotypical “Racial Other,” not only capable of Jewish self-representation, but also capable of representing any group widely believed to be non-white, non-Christian or otherwise “alien.” By studying select films in historical context, the course will trace changes in this stereotype. By the end of the semester, students will understand how film is shaped by, and how it actively shapes, our construction of American Selves vs. Ethnic Others.

JDST 233. Introduction to Jewish Folklore. 3 Units.

Exploration of a variety of genres, research methods and interpretations of Jewish folklore, from antiquity to the present. Emphasis on how Jewish folk traditions and culture give us access to the spirit and mentality of the many different generations of the Jewish ethnic group, illuminating its past and informing the direction of its future development. Offered as ANTH 233, RLGN 233, and JDST 233.
JDST 254. The Holocaust. 3 Units.
This class seeks to answer fundamental questions about the Holocaust: the German-led organized mass murder of nearly six million Jews and millions of other ethnic and religious minorities. It will investigate the origins and development of racism in modern European society, the manifestations of that racism, and responses to persecution. An additional focus of the course will be comparisons between different groups, different countries, and different phases during the Nazi era. Offered as HSTY 254, RLGN 254, ETHS 254, and JDST 254.

JDST 268. Women in the Bible: Ethnographic Approaches to Rite and Ritual, Story, Song, and Art. 3 Units.
Examination of women in Jewish and Christian Biblical texts, along with their Jewish, Christian (and occasionally Muslim) interpretations. Discussion of how these traditions have shaped images of, and attitudes toward, women in western civilization. Offered as RLGN 268, WGST 268, and JDST 268.

JDST 280. Religion and Politics in the Middle East. 3 Units.
An in-depth look at the relationship between politics and religion in the Middle East. Students will spend the first week on the CWRU campus and the last three weeks in Israel, where time will be divided between classroom teaching, guest lectures, and "field trips" to important sites. Students will have the opportunity to interact directly with members of the region's diverse religious groups within the political, social, and cultural contexts in which they live. A final research paper will be required. Knowledge of Hebrew is not necessary. Offered as JDST 280 and RLGN 280.

JDST 314. Mythologies of the Afterlife. 3 Units.
This course provides a multidisciplinary approach to the idea of an afterlife, and its manifestation in diverse cultures. We will examine the way varying views of the afterlife influence religion, popular culture and palliative care, and how human creativity has shaped the heavens, hells, hauntings and holidays of diverse populations over time and across space. Students will come to see the afterlife as an integral part of human history and experience, not only because it helps people die with better hope, but because it helps them to live more richly. Offered as RLGN 314 and JDST 314.

JDST 326. The Holocaust and the Arts. 3 Units.
This course explores artistic output during the Holocaust, as well as responses to the Holocaust in various forms, including music, art, architecture, film, and literature. Offered as MUHI 326, JDST 326, HSTY 326 and RLGN 326.

JDST 330. Classical Jewish Religious Thought. 3 Units.
The thought of some major biblical and Rabbinic writings and of the classic age of medieval Jewish philosophy. Offered as JDST 330, PHIL 332, and RLGN 330.

JDST 341. Jewish Urban History. 3 Units.
This course examines the relationship between Jews and the modern urban environment. It seeks to answer questions such as: How did the modernization of cities affect Jews and Jewish communities? In what ways did Jews contribute to modern urban cultural and social forms? What is Jewish urban space, is it unique, and how is it remembered later on? Are there differences between the patterns in Europe, the Middle East, and the Americas? Offered as HSTY 341 and JDST 341. Counts as SAGES Departmental Seminar.

JDST 350. Jewish Ethics. 3 Units.
An exploration of Jewish moral and ethical discourse. The first half of the course will be devoted to studying the structure and content of classical Jewish ethics on issues including marriage, abortion, euthanasia, and social justice. Students will read and react to primary Jewish religious texts. The second half of the course will focus on various modern forms of Judaism and the diversity of moral rhetoric in the Jewish community today. Readings will include such modern thinkers as Martin Buber and Abraham Joshua Heschel. Offered as JDST 350, RLGN 350, and RLGN 450. Counts as SAGES Departmental Seminar.

JDST 371. Jews under Islam and Christianity. 3 Units.
This course examines the social and political status of Jews under Muslim and Christian rule since the Middle Ages. Themes include interfaith relations, Islamic and Christian beliefs regarding the Jews, Muslim and Christian regulation of Jewry, and the Jewish response. Offered as HSTY 371, JDST 371 and RLGN 371. Counts as SAGES Departmental Seminar.

JDST 389. History of Zionism. 3 Units.
This course seeks to elucidate the major strands of Zionism, their origins, how they have interacted, and their impact on contemporary Israeli society. These may include political Zionism, cultural Zionism, socialist (labor) Zionism, Revisionist Zionism, and religious Zionism. This course will also examine the differences in the appeal of Zionism to Jews in different places, such as Western Europe, Eastern Europe and the United States. Offered as HSTY 389 and JDST 389. Counts as SAGES Departmental Seminar.

JDST 392. Independent Study. 1 - 3 Unit.
Up to three semester hours of independent study may be taken in a single semester.

Department of Mathematics, Applied Mathematics, and Statistics

The Department of Mathematics, Applied Mathematics, and Statistics at Case Western Reserve University is an active center for mathematical research. Faculty members conduct research in algebra, analysis, applied mathematics, convexity, dynamical systems, geometry, imaging, inverse problems, life sciences applications, mathematical biology, modeling, numerical analysis, probability, scientific computing, stochastic systems, and other areas.

The department offers a variety of programs leading to both undergraduate and graduate degrees in traditional and applied mathematics and statistics. Undergraduate degrees are Bachelor of Arts and Bachelor of Science in mathematics, Bachelor of Science in applied mathematics, and Bachelor of Arts or Bachelor of Science in statistics. Graduate degrees are Master of Science and Doctor of Philosophy. Integrated BS/MS programs allow a student to earn a Bachelor of Science in either mathematics or applied mathematics and a master's degree from the mathematics department or another department in five years; there is a similar integrated bachelor/masters program in statistics. The department, in cooperation with the college's Teacher Licenseure Program, offers a program for individuals interested in pre-college teaching. Together with the Department of Physics, it offers a specialized joint Bachelor of Science in Mathematics and Physics.

Mathematics plays a central role in the physical, biological, economic, and social sciences. Because of this, employment prospects are always strong for individuals with degrees in mathematics, and there are
excellent career opportunities. A bachelor’s degree in mathematics or applied mathematics offers a strong background for graduate school in many areas (including computer science, medicine, and law, in addition to mathematics and science) or a position in the private sector. A master’s degree in mathematics or applied mathematics, or an undergraduate degree in applied mathematics combined with a master’s in a different area, is an excellent basis for employment in the private sector in a technical field. A PhD degree is usually necessary for college teaching and research.

Statistics links mathematics to other disciplines in order to understand uncertainty and probability in the abstract and in the context of actual applications to science, medicine, actuarial science, social science, management science, business, engineering, and contemporary life. As technology brings advances, the statistical theory and methodology required to do them justice becomes more challenging: higher dimensional, dynamic, or computer-intensive. The field of statistics is rapidly expanding to meet the three facets of these challenges: the underlying mathematical theory, the data analysis and modeling methodology, and the interdisciplinary collaborations and new fields of application.

Students in the department, both undergraduate and graduate, have opportunities to interact personally with faculty and other students, and research and other activities are available. In addition, undergraduates can obtain teaching experience via the department’s supplemental instruction program.

BA in Mathematics (p. 191) | Teacher Licensure (p. 191) | BS in Mathematics (p. 191) | BS in Applied Mathematics (p. 192) | BS in Mathematics and Physics (p. 192) | BA in Statistics (p. 194) | BS in Statistics (p. 194) | Integrated BS/MS (p. 195) | Minor in Mathematics (p. 195) | Minor in Statistics (p. 196)

**Undergraduate Programs**

**Majors**

A Bachelor of Arts in mathematics, a Bachelor of Science in mathematics, a Bachelor of Science in applied mathematics, a Bachelor of Science in mathematics and physics, a Bachelor of Arts in statistics, and a Bachelor of Science in statistics are available to students at Case Western Reserve University. All undergraduate degrees in the department are based on a four-course sequence in calculus and differential equations and have a computational component. The mathematics degrees all require a further mathematics core in analysis and algebra. The statistics degrees all require a further statistics core. Each of these cores consists of four courses. There are additional technical requirements particular to each degree.

**Bachelor of Arts in Mathematics**

The BA degree in mathematics requires at least 38 hours of mathematics courses, including:

- **MATH 121** Calculus for Science and Engineering I 4
- **MATH 122** Calculus for Science and Engineering II 4
- or **MATH 124** Calculus II
- **MATH 223** Calculus for Science and Engineering III 3
- or **MATH 227** Calculus III
- **MATH 224** Elementary Differential Equations 3
- or **MATH 228** Differential Equations

**Teacher Licensure**

The Department offers a special option for undergraduate students who wish to pursue a mathematics major and a career in teaching. The Adolescent to Young Adult (AYA) Teacher Licensure Program in Integrated Mathematics prepares CWRU students to receive an Ohio Teaching License for grades 7-12. Students declare a second major in education – which involves 34 hours in education and a practicum requirement – and complete a planned sequence of mathematics content courses within the context of a mathematics major. The program is designed to offer several unique features not found in other programs and to place students in mentored teaching situations throughout their teacher preparation career. This small, rigorous program is designed to capitalize on the strengths of the department, the CWRU Teacher Licensure Program, and the relationships the university has built with area schools.

The requirements of the program are:

(a) Completion of the BA program in mathematics, including the following as the three approved technical electives:

- **MATH 150** Mathematics from a Mathematician's Perspective 3
- **MATH 304** Discrete Mathematics 3
- **STAT 312** Basic Statistics for Engineering and Science 3

**Total Units** 9

(b) The completion of a second major in education. Students interested in this option should consult the description of the Teacher Licensure Program (p. 312) elsewhere in this bulletin or contact the director of teacher licensure.

**Bachelor of Science in Mathematics**

The BS degree in mathematics requires at least 50 hours of mathematics courses, including:

- **MATH 121** Calculus for Science and Engineering I 4
- **MATH 122** Calculus for Science and Engineering II 4
- or **MATH 124** Calculus II
- **MATH 223** Calculus for Science and Engineering III 3
- or **MATH 227** Calculus III
- **MATH 224** Elementary Differential Equations 3
- or **MATH 228** Differential Equations

- **MATH 307** Linear Algebra 3
- **MATH 308** Introduction to Abstract Algebra 3
- **MATH 321** Fundamentals of Analysis I 3
- **MATH 322** Fundamentals of Analysis II 3
- **MATH 324** Introduction to Complex Analysis 3
- or **MATH 425** Complex Analysis I

**Total Units** 41
MATH 307 Linear Algebra 3
MATH 308 Introduction to Abstract Algebra 3
MATH 321 Fundamentals of Analysis I 3
MATH 322 Fundamentals of Analysis II 3
MATH 324 Introduction to Complex Analysis 3
or MATH 425 Complex Analysis I 3
MATH 330 Introduction of Scientific Computing 3

Six approved technical electives * 18

The following three courses:
PHYS 121 General Physics I - Mechanics 4
PHYS 122 General Physics II - Electricity and Magnetism 4
PHYS 221 Introduction to Modern Physics 3

One of the following sequences: 6

- ASTR 201 The Sun and its Planets
- CHEM 105 Principles of Chemistry I
- CHEM 106 and Principles of Chemistry II
- CHEM 111 Principles of Chemistry for Engineers
- & ENGR 145 and Chemistry of Materials
- EEPS 110 Physical Geology
- & EEPS 115 and Introduction to Oceanography
- or EEPS 210 Historical Geology/Paleontology

Total Units 67

* No more than 9 hours may be from outside the department.

Bachelor of Science in Applied Mathematics

A student in this degree program must design a program of study in consultation with his or her academic advisor. This program of study must explicitly list the mathematics electives and the professional core in the area of application.

Areas of research in applied mathematics well represented in the department include:

- Applied dynamical systems
- Applied probability and stochastic processes
- Imaging
- Life science
- Scientific computing

Study plans with emphasis on areas of application closely related to mathematics but centered in other departments will also be considered. Such areas might include engineering applications, biology, cognitive science, or economics.

The BS degree in applied mathematics requires at least 50 hours of course work in mathematics and related subjects, in addition to a professional core that is specific to the area of application of interest to the student, including:

- MATH 121 Calculus for Science and Engineering I 4
- MATH 122 Calculus for Science and Engineering II 4
- or MATH 124 Calculus II
- MATH 223 Calculus for Science and Engineering III 3
- or MATH 227 Calculus III

MATH 224 Elementary Differential Equations 3
or MATH 228 Differential Equations 3
MATH 307 Linear Algebra 3
MATH 321 Fundamentals of Analysis I 3
MATH 322 Fundamentals of Analysis II 3
MATH 330 Introduction of Scientific Computing 3

One of the following two courses: 3

- MATH 324 Introduction to Complex Analysis 3
- MATH 425 Complex Analysis I 3

Approved mathematics electives: 21

Four courses specific to the concentration area of interest to the student (12 units)

Three MATH courses at the 300 level or higher (9 units)

Professional Core requirement 12

12 approved credit hours specific to an area of application.
This requirement is intended to promote scientific breadth and encourage application of mathematics to other fields.

Non-mathematics requirements

The following three courses:

- PHYS 121 General Physics I - Mechanics 4
- PHYS 122 General Physics II - Electricity and Magnetism 4
- PHYS 221 Introduction to Modern Physics 3

One of the following sequences: 6-8

- ASTR 201 The Sun and its Planets
- & ASTR 202 and Stars, Galaxies, and the Universe
- CHEM 105 Principles of Chemistry I
- & CHEM 106 and Principles of Chemistry II
- CHEM 111 Principles of Chemistry for Engineers
- & ENGR 145 and Chemistry of Materials
- EEPS 110 Physical Geology
- & EEPS 115 and Introduction to Oceanography
- or EEPS 210 Historical Geology/Paleontology

Total Units 79-81

Bachelor of Science in Mathematics and Physics

In contrast to the BS in applied mathematics or the BS in physics with a mathematical physics concentration, this degree provides a synergistic, coherent, and parallel education in mathematics and physics. To a close approximation, the challenging course work corresponds to combining the mathematics and physics cores, with the Physics Laboratory cluster replaced by a single, fourth-year laboratory semester. A student in this new program may use either of two official advisors, one available from each department, who would also constitute a committee for the administration of the degree and the approval of curriculum petitions.

The BS degree in mathematics and physics requires a total of 126 credits, including:

A. Mathematics requirements

- MATH 121 Calculus for Science and Engineering I 4
- MATH 122 Calculus for Science and Engineering II 4
- or MATH 124 Calculus II

- MATH 224 Elementary Differential Equations 3
- or MATH 228 Differential Equations 3
- MATH 307 Linear Algebra 3
- MATH 321 Fundamentals of Analysis I 3
- MATH 322 Fundamentals of Analysis II 3
- MATH 330 Introduction of Scientific Computing 3

- MATH 324 Introduction to Complex Analysis 3
- MATH 425 Complex Analysis I 3

- One of the following two courses: 3

- MATH 324 Introduction to Complex Analysis 3
- MATH 425 Complex Analysis I 3

- Approved mathematics electives: 21

- Four courses specific to the concentration area of interest to the student (12 units)

- Three MATH courses at the 300 level or higher (9 units)

- Professional Core requirement 12

- 12 approved credit hours specific to an area of application.
This requirement is intended to promote scientific breadth and encourage application of mathematics to other fields.

- Non-mathematics requirements

- The following three courses:

- PHYS 121 General Physics I - Mechanics 4
- PHYS 122 General Physics II - Electricity and Magnetism 4
- PHYS 221 Introduction to Modern Physics 3

- One of the following sequences: 6-8

- ASTR 201 The Sun and its Planets
- & ASTR 202 and Stars, Galaxies, and the Universe
- CHEM 105 Principles of Chemistry I
- & CHEM 106 and Principles of Chemistry II
- CHEM 111 Principles of Chemistry for Engineers
- & ENGR 145 and Chemistry of Materials
- EEPS 110 Physical Geology
- & EEPS 115 and Introduction to Oceanography
- or EEPS 210 Historical Geology/Paleontology

- Total Units 79-81
MATH 223  Calculus for Science and Engineering III  3
or MATH 227  Calculus III
MATH 224  Elementary Differential Equations  3
or MATH 228  Differential Equations
MATH 307  Linear Algebra  3
MATH 308  Introduction to Abstract Algebra  3
or MATH 330  Introduction of Scientific Computing
MATH 321  Fundamentals of Analysis I  3
MATH 322  Fundamentals of Analysis II  3
MATH 324  Introduction to Complex Analysis  3
Approved Mathematics electives  6

B. Physics requirements
PHYS 121  General Physics I - Mechanics  4
or PHYS 123  Physics and Frontiers I - Mechanics
PHYS 122  General Physics II - Electricity and Magnetism  4
or PHYS 124  Physics and Frontiers II - Electricity and Magnetism
PHYS 221  Introduction to Modern Physics  3
PHYS 310  Classical Mechanics  3
PHYS 313  Thermodynamics and Statistical Mechanics  3
PHYS 331  Introduction to Quantum Mechanics I  3
or PHYS 481  Quantum Mechanics I
PHYS 332  Introduction to Quantum Mechanics II  3
or PHYS 482  Quantum Mechanics II
One of the following:  3:
PHYS 315  Introduction to Solid State Physics
PHYS 316  Introduction to Nuclear and Particle Physics
PHYS 326  Physical Optics
PHYS 327  Laser Physics
PHYS 328  Cosmology and the Structure of the Universe
PHYS 336  Modern Cosmology
PHYS 365  General Relativity
PHYS 423  Classical Electromagnetism  3
PHYS 472  Graduate Physics Laboratory  3
Two of the following:  6
PHYS 250  Computational Methods in Physics
PHYS 349  Methods of Mathematical Physics I
PHYS 350  Methods of Mathematical Physics II

C. Senior project and seminar; one of two options:  6-7
C. (i) Mathematics option
MATH 351  Senior Project for the Mathematics and Physics Program
SAGES departmental seminar in Mathematics
C. (ii) Physics option
PHYS 303  Advanced Laboratory Physics Seminar
PHYS 351  Senior Physics Project
PHYS 352  Senior Physics Project Seminar

D. Other science requirements
CHEM 105  Principles of Chemistry I  3-4
or CHEM 111  Principles of Chemistry for Engineers
CHEM 106  Principles of Chemistry II  3-4
or ENGR 145  Chemistry of Materials

ENGR 131  Elementary Computer Programming  3

Total Units  88-91

* If approved by the M&P committee, other science sequence courses may be substituted.

In addition to the major coursework listed, there are requirements of 10 hours of SAGES First and University Seminars, 12 hours of CAS distribution requirements, and enough open electives to bring the total number of hours to at least 126.

First Year

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<tr>
<th>Units</th>
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<tr>
<td>General Physics I - Mechanics (PHYS 121)</td>
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<td>or Physics and Frontiers I - Mechanics (PHYS 123)</td>
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<td>Principles of Chemistry I (CHEM 105)</td>
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<td>or Principles of Chemistry for Engineers (CHEM 111)</td>
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<td>SAGES First Seminar</td>
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<td>General Physics II - Electricity and Magnetism (PHYS 122)</td>
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<td>or Physics and Frontiers II - Electricity and Magnetism (PHYS 124)</td>
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Second Year

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<td>Introduction to Modern Physics (PHYS 221)</td>
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<td>Calculus for Science and Engineering III (MATH 223)</td>
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<td>or Calculus III (MATH 227)</td>
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<td>Linear Algebra (MATH 307)</td>
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<td>Elementary Differential Equations (MATH 224)</td>
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<td>or Introduction of Scientific Computing (MATH 330)</td>
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Third Year

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<td>Introduction to Quantum Mechanics I (PHYS 331)</td>
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<td>MP Group II*</td>
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Bachelor's Degrees in Statistics

Students in statistics begin with a foundation in mathematics. Then they add statistical theory, plus intensive modern data analysis and a concentration in a field of their choice. The goal is to develop an appreciation of each facet of the discipline and a mastery of technical skills. This prepares students to enter a growing profession with opportunities in the academic, governmental, actuarial, and industrial spheres.

For the undergraduate student looking toward graduate school, the course of study within these guidelines easily incorporates additional mathematics in preparation for graduate courses. A student interested in

Actuarial Science should take STAT 317 and 318 among the 15 hours in statistical methodology, and should discuss with their advisor courses in operations research and numerical analysis which are fundamental to actuarial theory and computation.

BA in Statistics

The BA degree offers flexibility and the chance to pursue a wider range of interests than the BS degree allows. It also offers students the possibility of expanding the interdisciplinary aspect of the program by completing a second major. For example, students may combine statistics with computer science, biology (molecular, organismal, or ecological), psychology, economics, accounting, or management science.

The BA degree in statistics requires a minimum of 56 hours of approved course work, including 27 hours in statistics and the remainder in related disciplines and a substantive field of application. The specific requirements are as follows:

**MATH 121**  Calculus for Science and Engineering I  4
**MATH 122**  Calculus for Science and Engineering II  4
**MATH 124**  Calculus II  4
**MATH 223**  Calculus for Science and Engineering III  3
**MATH 227**  Calculus III  3
**MATH 224**  Elementary Differential Equations  3
**MATH 228**  Differential Equations  3
**MATH 201**  Introduction to Linear Algebra  3
Two computation classes  6
**ENGR 131**  Elementary Computer Programming  2
An additional higher-numbered course in computation from EECS or EPBI 414  6
**STAT 351**  Theoretical Statistics I  3
**STAT 352**  Theoretical Statistics II  3

At least 15 hours of courses in statistical methodology. This may include STAT 243, STAT 244, any 300-level or higher STAT courses, or approved 300-level or higher courses in statistical methodology or probability taught in biostatistics, electrical engineering and computer science, economics, mathematics, operations research, systems engineering, etc. At least 6 hours must be in STAT.

Two approved courses (or more) numbered 300 or above in an approved discipline outside statistics.  6

Total Units  56

BS in Statistics

The BS degree in statistics requires a minimum of 68 hours of approved course work, including 27 hours in statistics and the remainder in related disciplines and a substantive field of application. In addition to the requirements for the BA, the BS degree includes a laboratory science requirement. For students seriously interested in basic science, a natural science is the logical choice as a focus for the application, and the BS degree is the logical choice of program. The specific requirements are as follows:

**MATH 121**  Calculus for Science and Engineering I  4
**MATH 122**  Calculus for Science and Engineering II  4
or MATH 124  Calculus II  3
MATH 223  Calculus for Science and Engineering III  3
or MATH 227  Calculus III  3
MATH 224  Elementary Differential Equations  3
or MATH 228  Differential Equations  3
MATH 201  Introduction to Linear Algebra  3
Two computation classes  6
ENGR 131  Elementary Computer Programming

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT 325  Data Analysis and Linear Models</td>
<td>3</td>
</tr>
<tr>
<td>STAT 326  Multivariate Analysis and Data Mining</td>
<td>3</td>
</tr>
<tr>
<td>STAT 345  Theoretical Statistics I</td>
<td>3</td>
</tr>
<tr>
<td>STAT 346  Theoretical Statistics II</td>
<td>3</td>
</tr>
</tbody>
</table>

At least 15 hours of courses in statistical methodology. This may include STAT 243, STAT 244, any 300-level or higher STAT courses, or approved 300-level or higher courses in statistical methodology or probability taught in biostatistics, electrical engineering and computer science, economics, mathematics, operations research, systems engineering, etc. At least 6 hours must be in STAT.

Two approved courses (or more) numbered 300 or above in an approved discipline outside statistics.

A combined total of 12 hours (or more) in ASTR, BIOL, CHEM, or PHYS which may be counted toward a major in that field, including at least one of the following sequences:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 121  General Physics I - Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 122  and General Physics II - Electricity and Magnetism</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 105  Principles of Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>&amp; CHEM 106  and Principles of Chemistry II</td>
<td>3</td>
</tr>
<tr>
<td>&amp; CHEM 113  and Principles of Chemistry Laboratory</td>
<td>3</td>
</tr>
</tbody>
</table>

Students are strongly encouraged to include advanced expository or technical writing courses in their programs.

**Total Units**: 68

**Actuarial Science**

A student in either statistics program who is interested in actuarial science should take STAT 317 and 318 among the 15 hours in statistical methodology, and should discuss with their advisor courses in operations research and numerical analysis which are fundamental to actuarial theory and computation.

---

### Integrated BS/MS Program in Mathematics and/or Applied Mathematics

The integrated BS/MS program is intended for highly motivated candidates for the BS in mathematics and applied mathematics who wish to pursue an advanced degree. Application to the BS/MS program must be made after completion of 75 semester hours of course work and prior to attaining senior status (completion of 90 semester hours). Generally, this means that a student will submit the application during his/her sixth semester of undergraduate course enrollment and will have no fewer than two semesters of remaining BS requirements to complete. Applicants should consult the dean of undergraduate studies.

A student admitted to the program may, in the senior year, take up to nine hours of graduate courses (400 level and above) that will count towards both BS and MS requirements. The courses to be doubled-counted must be specified at the time of application. Any undergraduate course work that is to be applied to the MS must be beyond that used to satisfy BS degree requirements and must conform to university, graduate school, and department rules. Students may petition to transfer graduate course work taken prior to application to the BS/MS program subject to the rules of the graduate school.

Students for whom the master’s project or thesis is a continuation and development of the senior project should register for (or the appropriate project course) during the senior year and are expected to complete all other courses for the BS before enrolling in further MS course work and thesis (continuing the senior project). Students for whom the master’s thesis or project is distinct from the senior project will be expected to complete the BS degree before taking further graduate courses for the master’s degree.

### Integrated BS/MS in Applied Mathematics and Another Discipline

There is the possibility of an integrated five-year study plan leading to a BS in applied mathematics and an MS in the area of application. In order to complete the requirements for the BS/MS in five years, students must choose an area outside mathematics that integrates well with mathematics, such as computing/information science, operations research, systems engineering, control theory, biology, or cognitive science. The general academic requirements for Integrated BS/MS programs must be followed. (Since the graduate courses required for the MS degree are determined by the respective department, each student in the dual-degree program should have a secondary advisor in that department, starting no later than the junior year, and should consult with this advisor concerning requirements for the MS degree.)

### Integrated Bachelors/MS in Statistics

The combined bachelor-master degrees in statistics require a minimum of 21 hours beyond the bachelor's degree requirements. In total, 42 hours must be in statistics, including an MS thesis or research project, with the remainder (either 41 or 26 hours for BS or BA, respectively) in approved coursework in related disciplines and a field of application. In addition to the BS or BA requirements, a combined degree program must include:

1. STAT 455 and three semesters of STAT 491;
2. STAT 495;
3. MS research project (STAT 621) or MS Thesis (STAT 651);
4. At least 6 additional hours of courses in statistical theory and methodology (making a total of 21 hours including at least 4 STAT courses numbered 400 or higher) to be chosen from Statistics Department offerings numbered 300 and higher, or approved courses in statistical methodology or probability taught in biostatistics, computer science, economics, mathematics, operations research, systems engineering, etc. Students are strongly encouraged to include advanced expository or technical writing courses in their programs.

### Minor in Mathematics

A minor in mathematics is available to all undergraduates. No more than two courses can be used to satisfy both minor requirements and the requirements of the student’s major field (meaning departmental degree
requirements, including departmental technical electives and common course requirements of the student’s school).

The minor in mathematics requires 17 hours of mathematics courses, including:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 121</td>
<td>Calculus for Science and Engineering I</td>
</tr>
<tr>
<td>or MATH 125</td>
<td>Math and Calculus Applications for Life, Managerial, and Social Sci I</td>
</tr>
<tr>
<td>MATH 122</td>
<td>Calculus for Science and Engineering II</td>
</tr>
<tr>
<td>or MATH 124</td>
<td>Calculus II</td>
</tr>
<tr>
<td>or MATH 126</td>
<td>Math and Calculus Applications for Life, Managerial, and Social Sci II</td>
</tr>
<tr>
<td>MATH 223</td>
<td>Calculus for Science and Engineering III</td>
</tr>
<tr>
<td>or MATH 227</td>
<td>Calculus III</td>
</tr>
<tr>
<td>MATH 224</td>
<td>Elementary Differential Equations</td>
</tr>
<tr>
<td>or MATH 228</td>
<td>Differential Equations</td>
</tr>
<tr>
<td>MATH 150</td>
<td>Mathematics from a Mathematician’s Perspective</td>
</tr>
<tr>
<td>MATH 201</td>
<td>Introduction to Linear Algebra</td>
</tr>
<tr>
<td>or MATH 307</td>
<td>Linear Algebra</td>
</tr>
<tr>
<td>MATH 301</td>
<td>Undergraduate Reading Course</td>
</tr>
<tr>
<td>MATH 302</td>
<td>Departmental Seminar</td>
</tr>
<tr>
<td>MATH 303</td>
<td>Elementary Number Theory</td>
</tr>
<tr>
<td>MATH 304</td>
<td>Discrete Mathematics</td>
</tr>
<tr>
<td>MATH 308</td>
<td>Introduction to Abstract Algebra</td>
</tr>
<tr>
<td>MATH 321</td>
<td>Fundamentals of Analysis I</td>
</tr>
<tr>
<td>MATH 322</td>
<td>Fundamentals of Analysis II</td>
</tr>
<tr>
<td>MATH 324</td>
<td>Introduction to Complex Analysis</td>
</tr>
<tr>
<td>MATH 327</td>
<td>Convexity and Optimization</td>
</tr>
<tr>
<td>MATH 330</td>
<td>Introduction of Scientific Computing</td>
</tr>
<tr>
<td>MATH 333</td>
<td>Mathematics and Brain</td>
</tr>
<tr>
<td>MATH 338</td>
<td>Introduction to Dynamical Systems</td>
</tr>
<tr>
<td>MATH 343</td>
<td>Theoretical Computer Science</td>
</tr>
<tr>
<td>MATH 363</td>
<td>Knot Theory</td>
</tr>
<tr>
<td>MATH 380</td>
<td>Introduction to Probability</td>
</tr>
<tr>
<td>MATH 150</td>
<td>Mathematics from a Mathematician’s Perspective</td>
</tr>
</tbody>
</table>

* To count toward a minor in mathematics, MATH 150 Mathematics from a Mathematician’s Perspective must be taken in the first or second year.

### Minor in Statistics

A minor in statistics requires a minimum of 15 hours of approved course work. The minor must satisfy the requirements below and must include a minimum of 9 credits in STAT courses.

One of the following sequences:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT 243</td>
<td>Statistical Theory with Application I</td>
</tr>
<tr>
<td>&amp; STAT 244</td>
<td>and Statistical Theory with Application II</td>
</tr>
<tr>
<td>STAT 345</td>
<td>Theoretical Statistics I</td>
</tr>
<tr>
<td>&amp; STAT 346</td>
<td>and Theoretical Statistics II</td>
</tr>
</tbody>
</table>

Or other approved sequence

One of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT 312</td>
<td>Basic Statistics for Engineering and Science</td>
</tr>
<tr>
<td>STAT 313</td>
<td>Statistics for Experimenters</td>
</tr>
<tr>
<td>STAT 332</td>
<td>Statistics for Signal Processing</td>
</tr>
<tr>
<td>STAT 333</td>
<td>Uncertainty in Engineering and Science</td>
</tr>
<tr>
<td>STAT 325</td>
<td>Data Analysis and Linear Models</td>
</tr>
</tbody>
</table>

Two approved elective courses numbered 300 or above. 6

**Total Units** 15

### Graduate Programs

The department offers programs leading to the Master of Science and the Doctor of Philosophy degrees. At the master’s level, students may pursue degrees in mathematics, applied mathematics, or statistics. At the doctoral level, students may pursue degrees in mathematics or applied mathematics.

A student must satisfy all of the general requirements of the graduate school as well as the more specific requirements of the department to earn either a master’s or doctoral degree. Each graduate student is assigned a faculty advisory committee during the first year of study. The committee’s primary responsibility is to help the student plan an appropriate and sufficiently broad program of course work and study that will satisfy both the degree requirements and the special interests of the student. With the aid of the advisory committee, each student must present a study plan indicating how he or she intends to satisfy the requirements for a graduate degree.

The main requirements are as follows.

### Master of Science in Mathematics

A minimum of 27 credit hours of approved course work, at least 18 of which must be at the 400 level or higher, is required for the MS degree in mathematics. Courses in two of the following three basic areas must be included among the 27 credit hours required for graduation:

<table>
<thead>
<tr>
<th>Area</th>
<th>Courses</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstract Algebra</td>
<td>MATH 401 Abstract Algebra I</td>
<td>6</td>
</tr>
<tr>
<td>MATH 402 Abstract Algebra II</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Analysis</td>
<td>MATH 423 Introduction to Real Analysis I</td>
<td>6</td>
</tr>
<tr>
<td>MATH 424 Introduction to Real Analysis II</td>
<td></td>
<td></td>
</tr>
<tr>
<td>or MATH 425 Complex Analysis I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Topology</td>
<td>MATH 461 Introduction to Topology</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Units** 15

The student must pass a comprehensive oral examination on three areas, two of which must be selected from the basic ones listed above (although no particular courses are specified). The third area for the examination may be any approved subject.

A student in the MS program in mathematics may substitute the comprehensive exam examination requirement with an expository or original thesis, which will count as 6 credit hours of course work. The thesis will be defended in the course of an oral examination, during which the student will be questioned about the thesis and related topics. These two variants correspond to the graduate school’s Plan A and Plan B.
Master of Science in Applied Mathematics

The department offers specialized programs in applied mathematics. For each of the programs, there is a minimum requirement of 27 credit hours of course work, at least 18 of which must be at the 400 level or higher. Students in the program must complete course work requirements in each of the following groups:

- At least 15 hours offered by the Department of Mathematics, Applied Mathematics, and Statistics
- At least 6 hours of courses offered outside the Department of Mathematics, Applied Mathematics, and Statistics
- 6 hours of thesis work (see below) or successful completion of a comprehensive exam

Given the great diversity of topics used in applications, there cannot be a large common core of requirements for the MS in applied mathematics. Still, all students pursuing this degree are strongly advised to take MATH 431 Introduction to Numerical Analysis I and MATH 441 Mathematical Modeling. In addition, to add breadth to the student’s education, the set of courses taken within the department must include three credit hours of approved course work in at least three of the following seven breadth areas. (The list includes suitable courses for each area. Please note that a course may be used to satisfy only one breadth area requirement.)

Applied Mathematics Breadth Areas

Analysis and Linear Analysis:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 471</td>
<td>Advanced Engineering Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 423</td>
<td>Introduction to Real Analysis I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 405</td>
<td>Advanced Matrix Analysis</td>
<td>3</td>
</tr>
</tbody>
</table>

Probability and its Applications:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 439</td>
<td>Integrated Numerical and Statistical Computations</td>
<td>3</td>
</tr>
<tr>
<td>MATH 491</td>
<td>Probability I</td>
<td>3</td>
</tr>
</tbody>
</table>

Numerical Analysis and Scientific Computing:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 431</td>
<td>Introduction to Numerical Analysis I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 432</td>
<td>Numerical Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>MATH 433</td>
<td>Numerical Solutions of Nonlinear Systems and Optimization</td>
<td>3</td>
</tr>
</tbody>
</table>

Differential Equations:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 435</td>
<td>Ordinary Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>MATH 445</td>
<td>Introduction to Partial Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>MATH 449</td>
<td>Dynamical Models for Biology and Medicine</td>
<td>3</td>
</tr>
</tbody>
</table>

Inverse Problems and Imaging:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 439</td>
<td>Integrated Numerical and Statistical Computations</td>
<td>3</td>
</tr>
<tr>
<td>MATH 440</td>
<td>Computational Inverse Problems</td>
<td>3</td>
</tr>
<tr>
<td>MATH 475</td>
<td>Mathematics of Imaging in Industry and Medicine</td>
<td>3</td>
</tr>
</tbody>
</table>

Logic and Discrete Mathematics:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 406</td>
<td>Mathematical Logic and Model Theory</td>
<td>3</td>
</tr>
<tr>
<td>MATH 408</td>
<td>Introduction to Cryptology</td>
<td>3</td>
</tr>
</tbody>
</table>

Life Science:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 441</td>
<td>Mathematical Modeling</td>
<td>3</td>
</tr>
<tr>
<td>MATH 449</td>
<td>Dynamical Models for Biology and Medicine</td>
<td>3</td>
</tr>
<tr>
<td>MATH 478</td>
<td>Computational Neuroscience</td>
<td>3</td>
</tr>
</tbody>
</table>

* Not suitable for credit towards the PhD requirements.

Other suitable courses for students in applied mathematics include:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 424</td>
<td>Introduction to Real Analysis II</td>
<td>3</td>
</tr>
<tr>
<td>MATH 425</td>
<td>Complex Analysis I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 427</td>
<td>Convexity and Optimization</td>
<td>3</td>
</tr>
<tr>
<td>MATH 428</td>
<td>Fourier Analysis</td>
<td>3</td>
</tr>
<tr>
<td>MATH 444</td>
<td>Mathematics of Data Mining and Pattern Recognition</td>
<td>3</td>
</tr>
<tr>
<td>MATH 475</td>
<td>Mathematics of Imaging in Industry and Medicine</td>
<td>3</td>
</tr>
<tr>
<td>MATH 492</td>
<td>Probability II</td>
<td>3</td>
</tr>
</tbody>
</table>

The student must pass a comprehensive oral examination on three areas, two of which must be on the list of breadth areas (although no particular courses are specified). The third area for the examination may be any approved subject.

A student in the MS program in applied mathematics may substitute the comprehensive examination requirement with an expository or original thesis, which will count as 6 credit hours of course work. The thesis will be defended in the course of an oral examination, during which the student will be questioned about the thesis and related topics. These two variants correspond to the graduate school's Plan A and Plan B.

PhD Programs in Mathematics and Applied Mathematics

The doctorate is conferred not merely upon completion of a stipulated course of study, but rather upon clear demonstration of scholarly attainment and capability of original research work in mathematics. A doctoral student may plan either a traditional program of studies in mathematics (mathematics track) or a program of studies oriented toward applied mathematics (applied mathematics track). In either case, each student must take 36 credit hours of approved courses with a grade average of B or better. For students entering with a master’s degree in a mathematical subject compatible with our program, as determined by the graduate committee, this requirement is reduced to 18 credit hours of approved courses.

In addition to the course work, all PhD students in both tracks must complete the following specific requirements:

Qualifying Exams

Each student will be required to take two written qualifying exams. The exams will be in analysis and algebra for the mathematics track, and in numerical analysis and modeling for the applied mathematics track. Syllabi for the exams are available to students. Exams will be offered twice a year, usually in January and August. Students may attempt each exam up to three times. Under normal circumstances, students are expected to have passed both exams by the end of their fifth semester.

Area Exam

Each student will be required to pass an oral examination showing knowledge of the background and literature in the chosen area of specialization. The exam will be administered by the student’s advising committee, chaired by the principal advisor. The exam should normally take place within one year after final passage of the qualifying examinations and at least one year before the defense takes place. A student may retake the required exam once.

A written syllabus, with a list of the papers for which the student will be responsible, should be prepared and agreed upon by the student and advising committee at least two months before the exam takes place, at
which time a specific date and time for the exam should be decided. Both the syllabus and the scheduled date of the exam should then be reported to the graduate committee.

**Yearly Progress Reports**

After passing the area exam, students will present yearly progress reports to their advising committees, usually in April. These reports will consist of both a written summary of progress and an oral presentation delivered to the advising committee.

**Dissertation, Expository Talk, and Defense**

Students are required to produce a written dissertation and present an oral defense. The dissertation is expected to constitute an original contribution to mathematical knowledge. It must be provided to the defense committee (the composition of which is discussed below) at least 10 days prior to the defense. Students are required to give a colloquium-level presentation of their thesis work, open to all students and faculty, followed by an oral defense of the thesis work to the defense committee. The committee consists of at least four faculty members, including the student’s principal advisor and at least one outside faculty member.

Deadlines for the thesis defense and approval of the dissertation are determined by the School of Graduate Studies. It is the student’s responsibility to be aware of deadlines and make sure they are met.

**Requirements specific to the different tracks**

**Mathematics Track**

A student in the traditional mathematics program must demonstrate knowledge of the basic concepts and techniques of algebra, analysis (real and complex), and topology. This includes taking all courses in the three basic areas, and successfully completing qualifying examinations in algebra and analysis.

**Qualifying Examination**

A doctoral student in the mathematics track must take written examinations on abstract algebra and real analysis, as well as an oral examination in his or her chosen area of specialization. Subjects include complex analysis, control and calculus of variations, differential equations, dynamical systems, functional analysis, geometry, probability, and topology.

<table>
<thead>
<tr>
<th>Abstract Algebra:</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 401</td>
<td>Abstract Algebra I</td>
</tr>
<tr>
<td>MATH 402</td>
<td>Abstract Algebra II</td>
</tr>
<tr>
<td>Analysis:</td>
<td>9</td>
</tr>
<tr>
<td>MATH 423</td>
<td>Introduction to Real Analysis I</td>
</tr>
<tr>
<td>MATH 424</td>
<td>Introduction to Real Analysis II</td>
</tr>
<tr>
<td>MATH 425</td>
<td>Complex Analysis I</td>
</tr>
<tr>
<td>Topology:</td>
<td>3</td>
</tr>
<tr>
<td>MATH 461</td>
<td>Introduction to Topology</td>
</tr>
<tr>
<td>18 credit hours of approved course work</td>
<td>18</td>
</tr>
<tr>
<td><strong>Total Units</strong></td>
<td>36</td>
</tr>
</tbody>
</table>

A student with a master’s degree in a mathematical subject compatible with our program, as determined by the graduate committee, must take 18 credit hours of approved courses. The graduate committee will determine which of the specific course requirements stated above have been satisfied by the master’s course work.

**Applied Mathematics Track**

A student in the applied mathematics track must demonstrate knowledge of scientific computing, mathematical modeling, and differential equations. This includes taking qualifying examinations in the areas of computational mathematics and mathematical modeling, and taking certain courses in these three areas, as specified below.

**Qualifying Examination**

A doctoral student in the applied mathematics track must take written examinations in numerical analysis and in mathematical modeling, as well as an oral examination in his or her chosen area of specialization. Subjects include but are not restricted to fluid mechanics, statistical mechanics, epidemiology, neuroscience, and more traditional fields of mathematics.

<table>
<thead>
<tr>
<th>MATH 431</th>
<th>Introduction to Numerical Analysis I</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>One of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>MATH 432</td>
<td>Numerical Differential Equations</td>
<td></td>
</tr>
<tr>
<td>MATH 433</td>
<td>Numerical Solutions of Nonlinear Systems and Optimization</td>
<td></td>
</tr>
<tr>
<td>MATH 441</td>
<td>Mathematical Modeling</td>
<td>3</td>
</tr>
<tr>
<td>One of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>MATH 435</td>
<td>Ordinary Differential Equations</td>
<td></td>
</tr>
<tr>
<td>MATH 445</td>
<td>Introduction to Partial Differential Equations</td>
<td></td>
</tr>
<tr>
<td>24 hours of approved courses</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td><strong>Total Units</strong></td>
<td>36</td>
<td></td>
</tr>
</tbody>
</table>

* Must include at least 9 hours of courses offered outside the department and at least 9 credit hours offered by the Department of Mathematics, Applied Mathematics, and Statistics.

A student with a master’s degree in a mathematical subject compatible with our program, as determined by the graduate committee, must take 18 credit hours of approved courses, which must include at least 6 credit hours of courses offered outside the Department of Mathematics, Applied Mathematics, and Statistics and at least 9 credit hours offered by the Department of Mathematics, Applied Mathematics, and Statistics. The graduate committee will determine which of the specific course requirements stated above have been satisfied by the master’s course work.

Sample study plans for students with concentrations in scientific computing, imaging, mathematical biology, and stochastics follow. The graduate committee will entertain ideas for other serious study plans or qualifying exam subjects in addition to the most common variants.

**Scientific Computing Concentration**

<table>
<thead>
<tr>
<th>MATH 431</th>
<th>Introduction to Numerical Analysis I</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 432</td>
<td>Numerical Differential Equations</td>
<td></td>
</tr>
<tr>
<td>MATH 433</td>
<td>Numerical Solutions of Nonlinear Systems and Optimization</td>
<td></td>
</tr>
<tr>
<td>MATH 439</td>
<td>Integrated Numerical and Statistical Computations</td>
<td></td>
</tr>
<tr>
<td>or MATH 440</td>
<td>Computational Inverse Problems</td>
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<tr>
<td>MATH 441</td>
<td>Mathematical Modeling</td>
<td>3</td>
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<tr>
<td>MATH 445</td>
<td>Introduction to Partial Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>MATH 449</td>
<td>Dynamical Models for Biology and Medicine</td>
<td>3</td>
</tr>
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by the dean of graduate studies. Such exceptions are to be sought by
Any exception to university rules and regulations must be approved
committee. Such exceptions are to be sought by a written petition, approved by
have the formal approval of the department's graduate committee. Any exceptions to departmental regulations or requirements must be
Petitions

Mathematics Concentration

MATH 428 Fourier Analysis 3
MATH 431 Introduction to Numerical Analysis I 3
MATH 432 Numerical Differential Equations 3
MATH 433 Numerical Solutions of Nonlinear Systems and Optimization 3
MATH 439 Integrated Numerical and Statistical Computations 3

or MATH 440 Computational Inverse Problems 3

MATH 441 Mathematical Modeling 3
MATH 444 Mathematics of Data Mining and Pattern Recognition 3
MATH 445 Introduction to Partial Differential Equations 3
MATH 475 Mathematics of Imaging in Industry and Medicine 3
EBME 410 Medical Imaging Fundamentals 3
PHYS 431 Physics of Imaging 3
PHYS 460 Advanced Topics in NMR Imaging 3

Life Science Concentration

MATH 431 Introduction to Numerical Analysis I 3
MATH 432 Numerical Differential Equations 3
MATH 433 Numerical Solutions of Nonlinear Systems and Optimization 3
MATH 439 Integrated Numerical and Statistical Computations 3
MATH 440 Computational Inverse Problems 3
MATH 441 Mathematical Modeling 3
MATH 445 Introduction to Partial Differential Equations 3
MATH 449 Dynamical Models for Biology and Medicine 3
MATH 478 Computational Neuroscience 3

Application area 3

Stochastics Concentration

MATH 423 Introduction to Real Analysis I 3
MATH 424 Introduction to Real Analysis II 3
MATH 431 Introduction to Numerical Analysis I 3
MATH 441 Mathematical Modeling 3
MATH 491 Probability I 3
MATH 492 Probability II 3

Application area 3

PhD students entering with a bachelor's degree are subject to the same breadth requirements as students pursuing the MS degree in applied mathematics.

Petitions

Any exceptions to departmental regulations or requirements must have the formal approval of the department's graduate committee. Such exceptions are to be sought by a written petition, approved by the student's advisory committee or thesis advisor, to the graduate committee. Any exception to university rules and regulations must be approved by the dean of graduate studies. Such exceptions are to be sought by presenting a written petition to the graduate committee for departmental endorsement and approval prior to forwarding the petition to the dean.

Master of Science in Statistics

The dual core of the MS program is mathematical statistics and modern data analysis, with the option of a special Entrepreneurial Track. Expanding from this core, students develop technical facility in a variety of statistical methodologies. This breadth of competence is designed to equip graduates to go beyond the appropriate choice of method for implementation and to be able to adapt these techniques and to construct new methods to meet the specific objectives and constraints of new situations.

The MS degree in statistics requires a minimum of 27 hours of approved course work in statistics and related disciplines and an MS research project or a thesis. Each student's program is developed in consultation with the director of graduate studies or a senior faculty mentor and must satisfy the following requirements:

<table>
<thead>
<tr>
<th>Course Area</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Analysis and Linear Models</td>
<td>STAT 425 &amp; STAT 426</td>
<td>Data Analysis and Linear Models and Multivariate Analysis and Data Mining</td>
<td>6</td>
</tr>
<tr>
<td>Theoretical Statistics</td>
<td>STAT 445 &amp; STAT 446</td>
<td>Theoretical Statistics I and Theoretical Statistics II</td>
<td>6</td>
</tr>
<tr>
<td>Linear Models</td>
<td>STAT 455</td>
<td>Linear Models</td>
<td>3</td>
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<tr>
<td>Consulting Forum</td>
<td>STAT 495A</td>
<td>Consulting Forum</td>
<td>3</td>
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<tr>
<td>or STAT 495B</td>
<td>STAT 646</td>
<td>M.S. Research Project</td>
<td>3</td>
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</tbody>
</table>

A minimum of six hours of approved graduate-level statistics electives. 6

Total Units 27

The goals of this program are:

1. to give each student a balanced view of statistical theory and the application of statistics in practice or in substantive research
2. to have the student develop a broad competence in statistical methodology.

The required core course work reflects this balance. The first two requirements are for full-year sequences in data analysis and theory; the third develops the theory underlying linear modeling. The requirement for applications of statistics will be satisfied through intensive participation in the consulting forum; the selection of an MS research project provides additional exposure. Graduate students are also required to participate in a forum or seminar to gain experience in written and oral presentation.

The remainder of each student's program is individualized to address the more specialized statistical demands of the selected field of concentration or the focus of multidisciplinary work. Each student may choose either the applied research project or the thesis option, depending on individual interests. In either case, the student can expect to work with a faculty mentor in undertaking a significant task, the results of which will be suitable for publication or for presentation at professional society meetings.

A student coming to school from a position as a professional statistician might choose a statistical problem arising in the workplace as the basis for an MS research project. A student intending to continue graduate work toward a PhD might choose an MS research project to explore the
intimate relationship of statistics to substantive fields. Alternatively, either student might choose the thesis option to tailor a methodology to a new setting or to make a first essay at mathematical statistical research.

**Entrepreneurial Track**

The Master of Science in Statistics – Entrepreneurial Track (MSS-ET) is a professional degree designed to provide training in statistics focused on developing data analysis and decision-making skills in industrial, government, and consulting environments where uncertainties and related risks are present. It expands our master's program in statistics by creating a professional track that includes some business training. The Entrepreneurial Track provides instruction and real-world business experience to students who have a background in statistics and a vision for new and growing ventures. The MSS – ET program requires a minimum of 27 hours.

The required New Venture Creation and Technology Entrepreneurship courses will be offered by the Weatherhead School of Management. Students on internships will sign up for the consulting forum sequence. In addition, students are required to participate in an intensive (up to 30 hours) one-week annual workshop on the industrial use of statistics from the management perspective. This non-credit workshop will take place during the fall or spring undergraduate breaks.

**Doctor of Philosophy in Statistics**

Please note: Currently, admission to the doctoral program in Statistics is frozen due to reorganization of the program (students are being accepted into the master's program in Statistics). Please check with the department for the latest update.

The doctoral program focuses on research, with a plan of study devoted to the development of statistical methodology or theory with innovative applications. Graduates will be able both to extend the theoretical basis for statistics and to bring statistical thought to scientific research in other fields. The objective of preparing students to collaborate in interdisciplinary work demands breadth as well, so advanced knowledge of a substantive field and participation in the collaborative experience are also integral to the program.

Students planning to enter the doctoral program in statistics should obtain information from the departmental office. Plans of study are prepared individually by the graduate student and a faculty advisor to develop the talents and interests of each student.

**Department Faculty**

David A. Singer, PhD  
*Professor and Interim Chair*  
Geometry; differential and algebraic geometry of curves, finite and infinite-dimensional spaces of curves, variational problems

Alethea Barbaro, PhD  
*Assistant Professor*  
Computational Science and Engineering

Jenny Brynjarsdóttir, PhD  
(The Ohio State University)  
*Assistant Professor*  
Bayesian methodology; bayesian hierarchal modeling; dimension reduction in space-time modeling; environmental statistics; applications in climate and paleoclimate sciences; uncertainty quantification; model discrepancy

Christopher Butler, MS  
(Case Western Reserve University)  
*Senior Instructor and Theodore M. Focke Professorial Fellow*  
Teaching of mathematics

Daniela Calvetti, PhD  
(University of North Carolina)  
*James Wood Williamson Professor*  
Scientific computing; imaging, inverse problems; modeling and simulation in life science

Julia Dobrosotskaya, PhD  
(University of California, Los Angeles)  
*Assistant Professor*  
Harmonic analysis; PDE; variational methods; signal processing

Weihong Guo, PhD  
(University of Florida)  
*Warren E. Rupp Associate Professor*  
Image processing and analysis; compressive sensing; computational neuroscience; computer vision

David Gurarie, PhD  
(Hebrew University, Jerusalem, Israel)  
*Professor*  
Applied mathematics (differential equations, dynamical systems) in physics, chemistry, biology: applications to population biology, infectious disease modeling, epidemiology, metabolism, geophysical fluid dynamics

Michael Hurley, PhD  
(Northwestern University)  
*Professor*  
Dynamical systems; dynamics of cellular automata; dynamics of numerical methods

Steven H. Izen, PhD  
(Massachusetts Institute of Technology)  
*Professor*  
Image reconstruction from projections, both theoretically and in applied situations

Joel Langer, PhD  
(University of California, Santa Cruz)  
*Professor*  
Static and dynamics of curves and related physical models; the interplay between geometry and integrable Hamiltonian systems; geometry of finite and infinite dimensional spaces of curves

Marshall J. Leitman, PhD  
(Brown University)  
*Professor*  
Continuum physics; integral equations; functional analysis; mechanics of materials
Elizabeth Meckes, PhD  
(Stanford University)  
*Associate Professor*  
Probability theory; probabilistic problems in geometry, topology, and physics; random matrix theory

Mark Meckes, PhD  
(Case Western Reserve University)  
*Associate Professor*  
Geometry in high dimensions; random matrix theory; geometric probability

Anirban Mondal, PhD  
(Texas A&M University)  
*Assistant Professor*  
Bayesian Inference, Markov Chain Monte Carlo methods, spatial statistics, inverse problems

Erkki Somersalo, PhD  
(The University of North Carolina at Chapel Hill)  
*Professor*  
Modeling and simulation of complex biological systems; inverse problems and Bayesian scientific computing; medical imaging

Wanda Strychalski, PhD  
(The University of North Carolina at Chapel Hill)  
*Assistant Professor*  
Mathematical biology; scientific computing; computational cell biology

Stanislaw J. Szarek, PhD  
(Mathematical Institute, Polish Academy of Science)  
*Kerr Professor of Mathematics*  
Geometric functional analysis and its applications to study of high-dimensional phenomena including quantum information theory

Peter Thomas, PhD  
(University of Chicago)  
*Associate Professor*  
Stochastic phenomena in signaling pathways and neural dynamics. Motor control; synchronization and entrainment; information theory; pattern formation; bioinformatics.

Elisabeth Werner, PhD  
(Université Pierre et Marie Curie, Paris VI)  
*Professor*  
Convex geometry; analysis; probability; applications to approximation theory; mathematical physics; quantum information theory

Patricia Williamson, PhD  
(Bowling Green State University)  
*Senior Instructor*  
Bayesian analysis; estimation; hypothesis testing

Wojbor A. Woyczynski, PhD  
(Wroclaw University, Poland)  
*Professor and Director of the Center for Stochastic and Chaotic Processes in Science and Technology*  
Probability theory, stochastic calculus, Levy processes, nonlinear diffusions, chaotic dynamics; mathematical neurosciences, biology, economics, physics and engineering; history of mathematics

Longhua Zhao, PhD  
(The University of North Carolina at Chapel Hill)  
*Assistant Professor*  
Mathematical modeling; fluid mechanics; numerical analysis; scientific computing

**Secondary Faculty**

Colin McLarty, PhD  
(Case Western Reserve University)  
*Truman P. Handy Professor of Philosophy, Department of Philosophy*  
Logic; philosophy of mathematics, history of mathematics

**Adjunct Faculty**

Carsten Schütt, PhD  
(Christian-Albrecht Universität, Kiel)  
*Adjunct Professor*  
Convex geometry; Banach space theory; functional analysis

Richard Varga, PhD  
(Harvard University)  
*Adjunct Professor*  
Rational approximation; Riemann hypothesis; Gershgorin disks

**MATH Courses**

**MATH 110. Introduction to Mathematical Communication and Software. 1 Unit.**  

**MATH 120. Elementary Functions and Analytic Geometry. 3 Units.**  
Polynomial, rational, exponential, logarithmic, and trigonometric functions (emphasis on computation, graphing, and location of roots) straight lines and conic sections. Primarily a precalculus course for the student without a good background in trigonometric functions and graphing and/or analytic geometry. Not open to students with credit for MATH 121 or MATH 125. Prereq: Three years of high school mathematics.

**MATH 121. Calculus for Science and Engineering I. 4 Units.**  
Functions, analytic geometry of lines and polynomials, limits, derivatives of algebraic and trigonometric functions. Definite integral, antiderivatives, fundamental theorem of calculus, change of variables. Recommended preparation: Three and one half years of high school mathematics. Credit for at most one of MATH 121, MATH 123 and MATH 125 can be applied to hours required for graduation. Counts for CAS Quantitative Reasoning Requirement.

**MATH 122. Calculus for Science and Engineering II. 4 Units.**  
Continuation of MATH 121. Exponentials and logarithms, growth and decay, inverse trigonometric functions, related rates, basic techniques of integration, area and volume, polar coordinates, parametric equations. Taylor polynomials and Taylor’s theorem. Credit for at most one of MATH 122, MATH 124, and MATH 126 can be applied to hours required for graduation. Prereq: MATH 121, MATH 123 or MATH 126.
MATH 123. Calculus I. 4 Units.
Limits, continuity, derivatives of algebraic and transcendental functions, including applications, basic properties of integration. Techniques of integration and applications. Students must have 31/2 years of high school mathematics. Credit for at most one of MATH 121, MATH 123, and MATH 125 can be applied to hours required for graduation. Counts for CAS Quantitative Reasoning Requirement.

MATH 124, Calculus II. 4 Units.
Review of differentiation. Techniques of integration, and applications of the definite integral. Parametric equations and polar coordinates. Taylor’s theorem. Sequences, series, power series. Complex arithmetic. Introduction to multivariable calculus. Credit for at most one of MATH 122, MATH 124, and MATH 126 can be applied to hours required for graduation. Prereq: MATH 121 and placement by department.

MATH 125. Math and Calculus Applications for Life, Managerial, and Social Sci I. 4 Units.
Discrete and continuous probability; differential and integral calculus of one variable; graphing, related rates, maxima and minima. Integration techniques, numerical methods, volumes, areas. Applications to the physical, life, and social sciences. Students planning to take more than two semesters of introductory mathematics should take MATH 121. Recommended preparation: Three and one half years of high school mathematics. Credit for at most one of MATH 121, MATH 123, and MATH 125 can be applied to hours required for graduation. Counts for CAS Quantitative Reasoning Requirement.

MATH 126. Math and Calculus Applications for Life, Managerial, and Social Sci II. 4 Units.
Continuation of MATH 125 covering differential equations, multivariable calculus, discrete methods. Partial derivatives, maxima and minima for functions of two variables, linear regression. Differential equations; first and second order equations, systems, Taylor series methods; Newton’s method; difference equations. Credit for at most one of MATH 122, MATH 124, and MATH 126 can be applied to hours required for graduation. Prereq: MATH 121, MATH 123 or MATH 125.

MATH 150. Mathematics from a Mathematician’s Perspective. 3 Units.
An interesting and accessible mathematical topic not covered in the standard curriculum is developed. Students are exposed to methods of mathematical reasoning and historical progression of mathematical concepts. Introduction to the way mathematicians work and their attitude toward their profession. Should be taken in freshman year to count toward a major in mathematics. Prereq: Three and one half years of high school mathematics. Counts for CAS Quantitative Reasoning Requirement.

MATH 201. Introduction to Linear Algebra. 3 Units.
Matrix operations, systems of linear equations, vector spaces, subspaces, bases and linear independence, eigenvalues and eigenvectors, diagonalization of matrices, linear transformations, determinants. Less theoretical than MATH 307. Prereq: MATH 122, MATH 124 or MATH 126.

MATH 223. Calculus for Science and Engineering III. 3 Units.
Introduction to vector algebra; lines and planes. Functions of several variables: partial derivatives, gradients, chain rule, directional derivative, maxima/minima. Multiple integrals, cylindrical and spherical coordinates. Derivatives of vector valued functions, velocity and acceleration. Vector fields, line integrals, Green’s theorem. Credit for at most one of MATH 223 and MATH 227 can be applied to hours required for graduation. Prereq: MATH 122 or MATH 124.

MATH 224. Elementary Differential Equations. 3 Units.
A first course in ordinary differential equations. First order equations and applications, linear equations with constant coefficients, linear systems, Laplace transforms, numerical methods of solution. Credit for at most one of MATH 224 and MATH 228 can be applied to hours required for graduation. Prereq: MATH 223 or MATH 227.

MATH 227. Calculus III. 3 Units.
Vector algebra and geometry. Linear maps and matrices. Calculus of vector valued functions. Derivatives of functions of several variables. Multiple integrals. Vector fields and line integrals. Credit for at most one of MATH 223 and MATH 227 can be applied to hours required for graduation. Prereq: MATH 124 and placement by the department.

MATH 301. Undergraduate Reading Course. 1 - 3 Unit.
Students must obtain the approval of a supervising professor before registration. More than one credit hour must be approved by the undergraduate committee of the department.

MATH 302. Departmental Seminar. 3 Units.
A seminar devoted to understanding the formulation and solution of mathematical problems. SAGES Department Seminar. Students will investigate, from different possible viewpoints, via case studies, how mathematics advances as a discipline—what mathematicians do. The course will largely be in a seminar format. There will be two assignments involving writing in the style of the discipline. Enrollment by permission (limited to majors depending on demand). Counts as SAGES Departmental Seminar.

MATH 303. Elementary Number Theory. 3 Units.
Primes and divisibility, theory of congruencies, and number theoretic functions. Diophantine equations, quadratic residue theory, and other topics determined by student interest. Emphasis on problem solving (formulating conjectures and justifying them). Prereq: MATH 122 or MATH 124.

MATH 304. Discrete Mathematics. 3 Units.
A general introduction to basic mathematical terminology and the techniques of abstract mathematics in the context of discrete mathematics. Topics introduced are mathematical reasoning, Boolean connectives, deduction, mathematical induction, sets, functions and relations, algorithms, graphs, combinatorial reasoning. Offered as EECS 302 and MATH 304. Prereq: MATH 122, MATH 124 or MATH 126.

MATH 305. Introduction to Advanced Mathematics. 3 Units.
A course on the theory and practice of writing, and reading mathematics. Main topics are logic and the language of mathematics, proof techniques, set theory, and functions. Additional topics may include introductions to number theory, group theory, topology, or other areas of advanced mathematics. Prereq: MATH 122, MATH 124 or MATH 126.
MATH 307. Linear Algebra. 3 Units.
A course in linear algebra that studies the fundamentals of vector spaces, inner product spaces, and linear transformations on an axiomatic basis. Topics include: solutions of linear systems, matrix algebra over the real and complex numbers, linear independence, bases and dimension, eigenvalues and eigenvectors, singular value decomposition, and determinants. Other topics may include least squares, general inner product and normed spaces, orthogonal projections, finite dimensional spectral theorem. This course is required of all students majoring in mathematics and applied mathematics. More theoretical than MATH 201. Prereq: MATH 122 or MATH 124.

MATH 308. Introduction to Abstract Algebra. 3 Units.
A first course in abstract algebra, studied on an axiomatic basis. The major algebraic structures studied are groups, rings and fields. Topics include homomorphisms and quotient structures. This course is required of all students majoring in mathematics. It is helpful, but not necessary, for a student to have taken MATH 307 before MATH 308. Prereq: MATH 122 or MATH 124.

MATH 319. Applied Probability and Stochastic Processes for Biology. 3 Units.
Applications of probability and stochastic processes to biological systems. Mathematical topics will include: introduction to discrete and continuous probability spaces (including numerical generation of pseudo random samples from specified probability distributions), Markov processes in discrete and continuous time with discrete and continuous sample spaces, point processes including homogeneous and inhomogeneous Poisson processes and Markov chains on graphs, and diffusion processes including Brownian motion and the Ornstein-Uhlenbeck process. Biological topics will be determined by the interests of the students and the instructor. Likely topics include: stochastic ion channels, molecular motors and stochastic ratchets, actin and tubulin polymerization, random walk models for neural spike trains, bacterial chemotaxis, signaling and genetic regulatory networks, and stochastic predator-prey dynamics. The emphasis will be on practical simulation and analysis of stochastic phenomena in biological systems. Numerical methods will be developed using a combination of MATLAB, the R statistical package, MCell, and/or URDME, at the discretion of the instructor. Student projects will comprise a major part of the course. Offered as BIOL 319, ECECS 319, MATH 319, SYBB 319, BIOL 419, EBME 419, MATH 419, PHOL 419, and SYBB 419. Prereq: MATH 224 or MATH 223 and BIOL 300 or BIOL 306 and MATH 201 or MATH 307 or consent of instructor.

MATH 321. Fundamentals of Analysis I. 3 Units.
Abstract mathematical reasoning in the context of analysis in Euclidean space. Introduction to formal reasoning, sets and functions, and the number systems. Sequences and series; Cauchy sequences and convergence. Required for all mathematics majors. Additional work required for graduate students. (May not be taken for graduate credit by graduate students in the Department of Mathematics.) Offered as MATH 321 and MATH 421. Prereq: MATH 223 or MATH 227.

MATH 322. Fundamentals of Analysis II. 3 Units.
Continuation of MATH 321. Point-set topology in metric spaces with attention to n-dimensional space; completeness, compactness, connectedness, and continuity of functions. Topics in sequences, series of functions, uniform convergence, Fourier series and polynomial approximation. Theoretical development of differentiation and Riemann integration. Required for all mathematics majors. Additional work required for graduate students. (May not be taken for graduate credit by graduate students in the Department of Mathematics.) Offered as MATH 322 and MATH 422. Prereq: MATH 321.

MATH 324. Introduction to Complex Analysis. 3 Units.

MATH 326. Geometry and Complex Analysis. 3 Units.
The theme of this course will be the interplay between geometry and complex analysis, algebra and other fields of mathematics. An effort will be made to highlight significant, unexpected connections between major fields, illustrating the unity of mathematics. The choice of text(s) and syllabus itself will be flexible, to be adapted to the range of interests and backgrounds of pre-enrolled students. Possible topics include: the Mobius group and its subgroups, hyperbolic geometry, elliptic functions, Riemann surfaces, applications of conformal mapping, and potential theory in classical physical models. Offered as MATH 326 and MATH 426. Prereq: MATH 324.

MATH 327. Convexity and Optimization. 3 Units.
Introduction to the theory of convex sets and functions and to the extremes in problems in areas of mathematics where convexity plays a role. Among the topics discussed are basic properties of convex sets (extreme points, facial structure of polytopes), separation theorems, duality and polars, properties of convex functions, minima and maxima of convex functions over convex set, various optimization problems. Offered as MATH 327, MATH 427, and OPRE 427. Prereq: MATH 223 or MATH 227.

MATH 330. Introduction of Scientific Computing. 3 Units.
An introductory survey to Scientific Computing from principles to applications. Topics which will be covered in the course include: solution of linear systems and least squares, approximation and interpolation, solution of nonlinear systems, numerical integration and differentiation, and numerical solution of differential equations. Projects where the numerical methods are used to solve problems from various application areas will be assigned throughout the semester. Prereq or Coreq: MATH 224 or MATH 228.

MATH 333. Mathematics and Brain. 3 Units.
This course is intended for upper level undergraduate students in Mathematics, Cognitive Science, Biomedical Engineering, Biology or Neuroscience who have an interest in quantitative investigation of the brain and its functions. Students will be introduced to a variety of mathematical techniques needed to model and simulate different brain functions, and to analyze the results of the simulations and of available measured data. The mathematical exposition will be followed—when appropriate—by the corresponding implementation in Matlab. The course will cover some basic topics in the mathematical aspects of differential equations, electromagnetism. Inverse problems and imaging related to brain functions. Validation and falsification of the mathematical models in the light of available experimental data will be addressed. This course will be a first step towards organizing the different brain investigative modalities within a unified mathematical framework. Lectures will include a discussion portion. A final presentation and written report are part of the course requirements. Counts as SAGES Departmental Seminar. Prereq: MATH 224 or MATH 228.

MATH 338. Introduction to Dynamical Systems. 3 Units.
Nonlinear discrete dynamical systems in one and two dimensions. Chaotic dynamics, elementary bifurcation theory, hyperbolicity, symbolic dynamics, structural stability, stable manifold theory. Prereq: MATH 223 or MATH 227.
MATH 343. Theoretical Computer Science. 3 Units.
Introduction to different classes of automata and their correspondence to different classes of formal languages and grammars, computability, complexity and various proof techniques. MATH/EECS 343 and MATH 410 cannot both be taken for credit. Offered as EECS 343 and MATH 343. Prereq: MATH 304 and EECS 340.

MATH 351. Senior Project for the Mathematics and Physics Program. 2 Units.
A two-semester course (2 credits per semester) in the joint B.S. in Mathematics and Physics program. Project based on numerical and/or theoretical research under the supervision of a mathematics faculty member, possibly jointly with a faculty member from physics. Study of the techniques utilized in a specific research area and of recent literature associated with the project. Work leading to meaningful results which are to be presented as a term paper and an oral report at the end of the second semester. Supervising faculty will review progress with the student on a regular basis, including detailed progress reports made twice each semester, to ensure successful completion of the work. Counts as SAGES Senior Capstone.

MATH 352. Mathematics Capstone. 3 Units.
Mathematics Senior Project. Students pursue a project based on experimental, theoretical or teaching research under the supervision of a mathematics faculty member, a faculty member from another Case department or a research scientist or engineer from another institution. A departmental Senior Project Coordinator must approve all project proposals and this same person will receive regular oral and written progress reports. Final results are presented at the end of the semester as a paper in a style suitable for publication in a professional journal as well as an oral report in a public Mathematics Capstone symposium. Counts as SAGES Senior Capstone.

MATH 357. Mathematical Modeling Across the Sciences. 3 Units.
A three credit course on mathematical modeling as it applies to the origins sciences. Students gain practical experience in a wide range of techniques for modeling research questions in cosmology and astrophysics, integrative evolutionary biology (including physical anthropology, ecology, paleontology, and evolutionary cognitive science), and planetary science and astrobiology. Offered as ORIG 301, ORIG 401 and MATH 357. Prereq: ORIG 201, ORIG 202, BIOL 225, MATH 122, CHEM 106 and (PHYS 122 or PHYS 124).

MATH 361. Geometry I. 3 Units.
An introduction to the various two-dimensional geometries, including Euclidean, spherical, hyperbolic, projective, and affine. The course will examine the axiomatic basis of geometry, with an emphasis on transformations. Topics include the parallel postulate and its alternatives, isometries and transformation groups, tilings, the hyperbolic plane and its models, spherical geometry, affine and projective transformations, and other topics. We will examine the role of complex and hypercomplex numbers in the algebraic representation of transformations. The course is self-contained. Counts as SAGES Departmental Seminar. Prereq: MATH 224.

MATH 363. Knot Theory. 3 Units.
An introduction to the mathematical theory of knots and links, with emphasis on the modern combinatorial methods. Reidemeister moves on link projections, ambient and regular isotopies, linking number tricolorability, rational tangles, braids, torus knots, seifert surfaces and genus, the knot polynomials (bracket, X, Jones, Alexander, HOMFLY), crossing numbers of alternating knots and amphicheirality. Connections to theoretical physics, molecular biology, and other scientific applications will be pursued in term projects, as appropriate to the background and interests of the students. Prereq: MATH 223 or MATH 227.

MATH 365. Introduction To Algebraic Geometry. 3 Units.
This is a first introduction to algebraic geometry - the study of solutions of polynomial equations - for advanced undergraduate students. Recent applications of this large and important area include number theory, combinatorics, theoretical physics, coding theory, and robotics. In this course we will learn the basic objects and notions of algebraic geometry. Topics that are planned to be covered are affine and projective varieties, the Zariski topology, the correspondence between ideals and varieties, the sheaf of regular functions, regular and rational maps, dimensions and tangent spaces. Examples such as Grassmannians, curves, and blow-ups will be discussed. Depending on time constraints, we may also touch upon the modern language of schemes, line bundles and the Riemann Roch formula, and algorithmic techniques such as Groebner bases. Prereq: MATH 307 and Coreq: MATH 308.

MATH 376. Dynamics of Biological Systems II: Tools for Mathematical Biology. 3 Units.
Building on the material in Biology 300, this course focuses on the mathematical tools used to construct and analyze biological models, with examples drawn largely from ecology but also from epidemiology, developmental biology, and other areas. Analytic "paper and pencil" techniques are emphasized, but we will also use computers to help develop intuition. By the end of the course, students should be able to recognize basic building blocks in biological models, be able to perform simple analysis, and be more fluent in translating between verbal and mathematical descriptions. Offered as BIOL 306 and MATH 376. Prereq: BIOL 300 or MATH 224 or consent of instructor.

MATH 378. Computational Neuroscience. 3 Units.
Computer simulations and mathematical analysis of neurons and neural circuits, and the computational properties of nervous systems. Students are taught a range of models for neurons and neural circuits, and are asked to implement and explore the computational and dynamic properties of these models. The course introduces students to dynamical systems theory for the analysis of neurons and neural learning, models of brain systems, and their relationship to artificial and neural networks. Term project required. Students enrolled in MATH 478 will make arrangements with the instructor to attend additional lectures and complete additional assignments addressing mathematical topics related to the course. Recommended preparation: MATH 223 and MATH 224 or BIOL 300 and BIOL 306. Offered as BIOL 378, COGS 378, MATH 378, BIOL 478, EBME 478, EECS 478, MATH 478 and NEUR 478.

MATH 380. Introduction to Probability. 3 Units.
MATH 383. Topics in Probability. 3 Units.
This is a second undergraduate course in probability. Topics may include: Stochastic processes, Markov chains, Brownian motion, martingales, measure-theoretic foundations of probability, quantitative limit theory/ rates of convergence, coupling methods, Fourier methods, and ergodic theory. Prereq: MATH 380.

MATH 394. Introduction to Information Theory. 3 Units.
This course is intended as an introduction to information and coding theory with emphasis on the mathematical aspects. It is suitable for advanced undergraduate and graduate students in mathematics, applied mathematics, statistics, physics, computer science and electrical engineering. Course content: Information measures-entropy, relative entropy, mutual information, and their properties. Typical sets and sequences, asymptotic equipartition property, data compression. Channel coding and capacity; channel coding theorem. Differential entropy, Gaussian channel, Shannon-Nyquist theorem. Information theory inequalities (400 level). Additional topics, which may include compressed sensing and elements of quantum information theory. Recommended Preparation: MATH 201 or MATH 307. Offered as MATH 394, EECS 394, MATH 494 and EECS 494. Prereq: MATH 223 and MATH 380 or requisites not met permission.

MATH 400. Mathematics Teaching Practicum. 1 Unit.
Practicum for teaching college mathematics. Includes preparation of syllabi, exams, lectures. Grading, alternative teaching styles, use of technology, interpersonal relations and motivation. Handling common problems and conflicts.

MATH 401. Abstract Algebra I. 3 Units.
Basic properties of groups, rings, modules and fields. Isomorphism theorems for groups; Sylow theorem; nilpotency and solvability of groups; Jordan-Holder theorem; Gauss lemma and Eisenstein’s criterion; finitely generated modules over principal ideal domains with applications to abelian groups and canonical forms for matrices; categories and functors; tensor product of modules, bilinear and quadratic forms; field extensions; fundamental theorem of Galois theory, solving equations by radicals. Prereq: MATH 308.

MATH 402. Abstract Algebra II. 3 Units.
A continuation of MATH 401. Prereq: MATH 401.

MATH 405. Advanced Matrix Analysis. 3 Units.
An advanced course in linear algebra and matrix theory. Topics include variational characterizations of eigenvalues of Hermitian matrices, matrix and vector norms, characterizations of positive definite matrices, singular value decomposition and applications, perturbation of eigenvalues. This course is more theoretical than MATH 431, which emphasizes computational aspects of linear algebra. Prereq: MATH 307.

MATH 406. Mathematical Logic and Model Theory. 3 Units.
Propositional calculus and quantification theory; consistency and completeness theorems; Gödel incompleteness results and their philosophical significance; introduction to basic concepts of model theory; problems of formulation of arguments in philosophy and the sciences. Offered as PHIL 306, MATH 406 and PHIL 406.

MATH 408. Introduction to Cryptology. 3 Units.
Introduction to the mathematical theory of secure communication. Topics include: classical cryptographic systems; one-way and trapdoor functions; RSA, DSA, and other public key systems; Primality and Factorization algorithms; birthday problem and other attack methods; elliptic curve cryptosystems; introduction to complexity theory; other topics as time permits. Recommended preparation: MATH 303.

MATH 413. Graph Theory. 3 Units.
Building blocks of a graph, trees, connectivity, matchings, coverings, planarity, NP-complete problems, random graphs, and expander graphs; various applications and algorithms. Prereq: MATH 201 or MATH 307.

MATH 419. Applied Probability and Stochastic Processes for Biology. 3 Units.
Applications of probability and stochastic processes to biological systems. Mathematical topics will include: introduction to discrete and continuous probability spaces (including numerical generation of pseudo random samples from specified probability distributions), Markov processes in discrete and continuous time with discrete and continuous sample spaces, point processes including homogeneous and inhomogeneous Poisson processes and Markov chains on graphs, and diffusion processes including Brownian motion and the Ornstein-Uhlenbeck process. Biological topics will be determined by the interests of the students and the instructor. Likely topics include: stochastic ion channels, molecular motors and stochastic ratchets, actin and tubulin polymerization, random walk models for neural spike trains, bacterial chemotaxis, signaling and genetic regulatory networks, and stochastic predator-prey dynamics. The emphasis will be on practical simulation and analysis of stochastic phenomena in biological systems. Numerical methods will be developed using a combination of MATLAB, the R statistical package, MCell, and/or URDME, at the discretion of the instructor. Student projects will comprise a major part of the course. Offered as BIOL 319, EECS 319, MATH 319, SYBB 319, BIOL 419, EBM 419, MATH 419, PHOL 419, and SYBB 419.

MATH 421. Fundamentals of Analysis I. 3 Units.
Abstract mathematical reasoning in the context of analysis in Euclidean space. Introduction to formal reasoning, sets and functions, and the number systems. Sequences and series; Cauchy sequences and convergence. Required for all mathematics majors. Additional work required for graduate students. (May not be taken for graduate credit by graduate students in the Department of Mathematics.) Offered as MATH 321 and MATH 421.

MATH 422. Fundamentals of Analysis II. 3 Units.
Continuation of MATH 321. Point-set topology in metric spaces with attention to n-dimensional space; completeness, compactness, and continuity of functions. Topics in sequences, series of functions, uniform convergence, Fourier series and polynomial approximation. Theoretical development of differentiation and Riemann integration. Required for all mathematics majors. Additional work required for graduate students. (May not be taken for graduate credit by graduate students in the Department of Mathematics.) Offered as MATH 322 and MATH 422. Prereq: MATH 321 or MATH 421.

MATH 423. Introduction to Real Analysis I. 3 Units.

MATH 424. Introduction to Real Analysis II. 3 Units.
MATH 425. Complex Analysis I. 3 Units.
Analytic functions. Integration over paths in the complex plane. Index of a point with respect to a closed path; Cauchy’s theorem and Cauchy’s integral formula; power series representation; open mapping theorem; singularities; Laurent expansion; residue calculus; harmonic functions; Poisson’s formula; Riemann mapping theorem. More theoretical and at a higher level than MATH 324. Prereq: MATH 322 or MATH 422.

MATH 426. Geometry and Complex Analysis. 3 Units.
The theme of this course will be the interplay between geometry and complex analysis, algebra and other fields of mathematics. An effort will be made to highlight significant, unexpected connections between major fields, illustrating the unity of mathematics. The choice of text(s) and syllabus itself will be flexible, to be adapted to the range of interests and backgrounds of pre-enrolled students. Possible topics include: the Mobius group and its subgroups, hyperbolic geometry, elliptic functions, Riemann surfaces, applications of conformal mapping, and potential theory in classical physical models. Offered as MATH 326 and MATH 426.

MATH 427. Convexity and Optimization. 3 Units.
Introduction to the theory of convex sets and functions and to the extremes in problems in areas of mathematics where convexity plays a role. Among the topics discussed are basic properties of convex sets (extreme points, facial structure of polytopes), separation theorems, duality and polars, properties of convex functions, minima and maxima of convex functions over convex set, various optimization problems. Offered as MATH 327, MATH 427, and OPRE 427.

MATH 428. Fourier Analysis. 3 Units.

MATH 431. Introduction to Numerical Analysis I. 3 Units.

MATH 432. Numerical Differential Equations. 3 Units.

MATH 433. Numerical Solutions of Nonlinear Systems and Optimization. 3 Units.
The course provides an introduction to numerical solution methods for systems of nonlinear equations and optimization problems. The course is suitable for upper-undergraduate and graduate students with some background in calculus and linear algebra. Knowledge of numerical linear algebra is helpful. Among the topics which will be covered in the course are Nonlinear systems in one variables; Newton's method for nonlinear equations and unconstrained minimization; Quasi-Newton methods; Global convergence of Newton’s methods and line searches; Trust region approach; Secant methods; Nonlinear least squares. Prereq: MATH 223 or MATH 227, and MATH 431 or permission.

MATH 434. Optimization of Dynamic Systems. 3 Units.

MATH 435. Ordinary Differential Equations. 3 Units.
A second course in ordinary differential equations. Existence, uniqueness, and continuation of solutions of ODE. Linear systems, fundamental matrix, qualitative methods (phase plane). Dependence on initial data and parameters (Gronwall's inequality, nonlinear variation of parameters). Stability for linear and nonlinear equations, linearization, Poincare-Bendixson theory. Additional topics may include regular and singular perturbation methods, autonomous oscillations, entrainment of forced oscillators, and bifurcations. Prereq: MATH 224 and either MATH 201 or MATH 307.

MATH 439. Integrated Numerical and Statistical Computations. 3 Units.
This course will embed numerical methods into a Bayesian framework. The statistical framework will make it possible to integrate a priori information about the unknowns and the error in the data directly into the most efficient numerical methods. A lot of emphasis will be put on understanding the role of the priors, their encoding into fast numerical solvers, and how to translate qualitative or sample-based information--or lack thereof--into a numerical scheme. Confidence on computed results will also be discussed from a Bayesian perspective, at the light of the given data and a priori information. The course should be of interest to anyone working on signal and image processing statistics, numerical analysis and modeling. Recommended Preparation: MATH 431. Offered as MATH 439 and STAT 439.

MATH 440. Computational Inverse Problems. 3 Units.
This course will introduce various computational methods for solving inverse problems under different conditions. First the classical regularization methods will be introduced, and the computational challenges which they pose, will be addressed. Following this, the statistical methods for solving inverse problems will be studied and their computer implementation discussed. We will combine the two approaches to best exploit their potentials. Applications arising from various areas of science, engineering, and medicine will be discussed throughout the course.
MATH 441. Mathematical Modeling. 3 Units.
Mathematics is a powerful language for describing real world phenomena and providing predictions that otherwise are hard or impossible to obtain. The course gives the students pre-requisites for translating qualitative descriptions given in the professional non-mathematical language into the quantitative language for mathematics. While the variety in the subject matter is wide, some general principles and methodologies that a modeler can pursue are similar in many applications. The course focuses on these similarities. The course is based on representative case studies that are discussed and analyzed in the classroom, the emphasis being on general principles of developing and analyzing mathematical models. The examples will be taken from different fields of science and engineering, including life sciences, environmental sciences, biomedical engineering and physical sciences. Modeling relies increasingly on computation, so the students should have basic skills for using computers and programs like Matlab or Mathematica. Prereq: MATH 224 or MATH 228.

MATH 444. Mathematics of Data Mining and Pattern Recognition. 3 Units.
This course will give an introduction to a class of mathematical and computational methods for the solution of data mining and pattern recognition problems. By understanding the mathematical concepts behind algorithms designed for mining data and identifying patterns, students will be able to modify to make them suitable for specific applications. Particular emphasis will be given to matrix factorization techniques. The course requirements will include the implementations of the methods in MATLAB and their application to practical problems. Prereq: MATH 201 or MATH 307.

MATH 445. Introduction to Partial Differential Equations. 3 Units.
Method of characteristics for linear and quasilinear equations. Second order equations of elliptic, parabolic, type; initial and boundary value problems. Method of separation of variables, eigenfunction expansions, Sturm-Liouville theory. Fourier, Laplace, Hankel transforms; Bessel functions, Legendre polynomials. Green's functions. Examples include: heat diffusion, Laplace's equation, wave equations, one dimensional gas dynamics and others. Appropriate for seniors and graduate students in science, engineering, and mathematics. Prereq: MATH 201 or MATH 308 and MATH 224 or MATH 228.

MATH 449. Dynamical Models for Biology and Medicine. 3 Units.
Introduction to discrete and continuous dynamical models with applications to biology and medicine. Topics include: population dynamics and ecology; models of infectious diseases; population genetics and evolution; biological motion (reaction-diffusion and chemotaxis); Molecular and cellular biology (biochemical kinetics, metabolic pathways, immunology). The course will introduce students to the basic mathematical concepts and techniques of dynamical systems theory (equilibria, stability, bifurcations, discrete and continuous dynamics, diffusion and wave propagation, elements of system theory and control). Mathematical exposition is supplemented with introduction to computer tools and techniques (Mathematica, Matlab). Prereq: MATH 224 or MATH 228, or BIOL/EBME 300, and MATH 201.

MATH 461. Introduction to Topology. 3 Units.

MATH 462. Algebraic Topology. 3 Units.
The fundamental group and covering spaces; van Kampen's theorem. Higher homotopy groups; long-exact sequence of a pair. Homology theory; chain complexes; short and long exact sequences; Mayer-Vietoris sequence. Homology of surfaces and complexes; applications. Prereq: MATH 461.

MATH 465. Differential Geometry. 3 Units.
Manifolds and differential geometry. Vector fields; Riemannian metrics; curvature; intrinsic and extrinsic geometry of surfaces and curves; structural equations of Riemannian geometry; the Gauss-Bonnet theorem. Prereq: MATH 321.

MATH 467. Differentiable Manifolds. 3 Units.
Differentiable manifolds and structures on manifolds. Tangent and cotangent bundle; vector fields; differential forms; tensor calculus; integration and Stokes' theorem. May include Hamiltonian systems and their formulation on manifolds; symplectic structures; connections and curvature; foliations and integrability. Prereq: MATH 322.

MATH 471. Advanced Engineering Mathematics. 3 Units.

MATH 473. Introduction to Mathematical Image Processing and Computer Vision. 3 Units.
This course introduces fundamental mathematics techniques for image processing and computer vision (IPCV). It is accessible to upper level undergraduate and graduate students from mathematics, sciences, engineering and medicine. Topics include but are not limited to image denoising, contrast enhancement, image compression, image segmentation and pattern recognition. Main tools are discrete Fourier analysis and wavelets, plus some statistics, optimization and a little calculus of variation and partial differential equations if time permitting. Students gain a solid theoretical background in IPCV modeling and computing, and master hands-on application experiences. Upon completion of the course, students will have clear understanding of classical methods, which will help them develop new methodical approaches for imaging problems arising in a variety of fields. Recommended preparation: Some coursework in scientific computing and ability to program in (or willingness to learn) a language such as Matlab or C/C++. Prereq: MATH 330 or MATH 431 or equivalent.

MATH 475. Mathematics of Imaging in Industry and Medicine. 3 Units.
The mathematics of image reconstruction; properties of radon transform, relation to Fourier transform; inversion methods, including convolution, backprojection, rho-filtered layergram, algebraic reconstruction technique (ART), and orthogonal polynomial expansions. Reconstruction from fan beam geometry, limited angle techniques used in MRI; survey of applications. Recommended preparation: PHYS 431 or MATH 471.
MATH 478. Computational Neuroscience. 3 Units.
Computer simulations and mathematical analysis of neurons and neural circuits, and the computational properties of nervous systems. Students are taught a range of models for neurons and neural circuits, and are asked to implement and explore the computational and dynamic properties of these models. The course introduces students to dynamical systems theory for the analysis of neurons and neural learning, models of brain systems, and their relationship to artificial and neural networks. Term project required. Students enrolled in MATH 478 will make arrangements with the instructor to attend additional lectures and complete additional assignments addressing mathematical topics related to the course. Recommended preparation: MATH 223 and MATH 224 or BIOL 300 and BIOL 306. Offered as BIOL 378, COGS 378, MATH 378, BIOL 478, EBME 478, EECS 478, MATH 478 and NEUR 478.

MATH 491. Probability I. 3 Units.

MATH 492. Probability II. 3 Units.

MATH 494. Introduction to Information Theory. 3 Units.
This course is intended as an introduction to information and coding theory with emphasis on the mathematical aspects. It is suitable for advanced undergraduate and graduate students in mathematics, applied mathematics, statistics, physics, computer science and electrical engineering. Course content: Information measures-entropy, relative entropy, mutual information, and their properties. Typical sets and sequences, asymptotic equipartition property, data compression. Channel coding and capacity: channel coding theorem. Differential entropy, Gaussian channel, Shannon-Nyquist theorem. Information theory inequalities (400 level). Additional topics, which may include compressed sensing and elements of quantum information theory. Recommended Preparation: MATH 201 or MATH 307. Offered as MATH 394, EECS 394, MATH 494 and EECS 494.

MATH 497. Stochastic Models: Time Series and Markov Chains. 3 Units.
Introduction to stochastic modeling of data. Emphasis on models and statistical analysis of data with a significant temporal and/or spatial structure. This course will analyze time and space dependent random phenomena from two perspectives: Stationary Time Series: Spectral representation of deterministic signals, autocorrelation. Power spectra. Transmission of stationary signals through linear filters. Optimal filter design, signal-to-noise ratio. Gaussian signals and correlation matrices. Spectral representation and computer simulation of stationary signals. Discrete Markov Chains: Transition matrices, recurrences and the first step analysis. Steady rate. Recurrence and ergodicity, empirical averages. Long run behavior, convergence to steady state. Time to absorption. Eigenvalues and nonhomogeneous Markov chains. Introduction to Gibbs fields and Markov Chain Monte Carlo (MCMC). This course is related to STAT 538 but can be taken independently of it. Offered as: MATH 497 and STAT 437. Prereq: STAT 243/244 (as a sequence) or STAT 312 or STAT 313 or STAT 332 or STAT 333 or STAT 345 or MATH 380 or MATH 491 or Requisites Not Met permission.

MATH 499. Special Topics. 3 Units.
Special topics in mathematics.

MATH 528. Analysis Seminar. 1 - 3 Unit.
Continuing seminar on areas of current interest in analysis. Allows graduate and advanced undergraduate students to become involved in research. Topics will reflect interests and expertise of the faculty and may include functional analysis, convexity theory, and their applications. May be taken more than once for credit. Consent of department required.

MATH 535. Applied Mathematics Seminar. 1 - 3 Unit.
Continuing seminar on areas of current interest in applied mathematics. Allows graduate and advanced undergraduate students to become involved in research. Topics will reflect interests and expertise of the faculty and may include topics in applied probability and stochastic processes, continuum mechanics, numerical analysis, mathematical physics or mathematical biology. May be taken more than once for credit.

MATH 549. Mathematical Life Sciences Seminar. 1 - 3 Unit.
Continuing seminar on areas of current interest in the applications of mathematics to the life sciences. Allows graduate and advanced undergraduate students to become involved in research. Topics will reflect interests and expertise of the faculty and may include mathematical biology, computational neuroscience, mathematical modeling of biological systems, models of infectious diseases, computational cell biology, mathematical ecology and mathematical biomedicine broadly constructed. May be taken more than once for credit.

MATH 598. Stochastic Models: Diffusive Phenomena and Stochastic Differential Equations. 3 Units.
Introduction to stochastic modeling of data. Emphasis on models and statistical analysis of data with significant temporal and/or spatial structure. This course will analyze time and space dependent random phenomena from two perspectives: Brownian motion and diffusive processes: Classification of stochastic processes, finite dimensional distributions, random walks and their scaling limits, Brownian motion and its paths properties, general diffusive processes, Fokker-Planck-Kolmogorov equations, Poisson and point processes, heavy tail diffusions, Levy processes, tempered stable diffusions. Stochastic calculus and stochastic differential equations: Wiener random integrals, mean-square theory, Brownian stochastic integrals and Ito formula, stochastic integrals for Levy processes, martingale property, basic theory and applications of stochastic differential equations. This course is related to STAT 437 but can be taken independently of it. Offered as MATH 598 and STAT 538.
MATH 601. Reading and Research Problems. 1 - 18 Unit.
Presentation of individual research, discussion, and investigation of research papers in a specialized field of mathematics.

MATH 651. Thesis (M.S.). 1 - 18 Unit.

MATH 701. Dissertation (Ph.D.). 1 - 9 Unit.
Prereq: Predoctoral research consent or advanced to Ph.D. candidacy milestone.

STAT Courses

STAT 201. Basic Statistics for Social and Life Sciences. 3 Units.
Designed for undergraduates in the social sciences and life sciences who need to use statistical techniques in their fields. Descriptive statistics, probability models, sampling distributions. Point and confidence interval estimation, hypothesis testing. Elementary regression and analysis of variance. Not for credit toward major or minor in Statistics. Counts for CAS Quantitative Reasoning Requirement.

STAT 201R. Basic Statistics for Social and Life Sciences Using R Programming. 3 Units.
Designed for undergraduates in the social sciences and life sciences who need to use statistical techniques in their fields. Descriptive statistics, probability models, sampling distributions. Point and confidence interval estimation, hypothesis testing. Elementary regression and analysis of variance. Not for credit toward major or minor in Statistics. Students may earn credit for only one of the following courses: STAT 201, STAT 201R, ANTH 319, PSCL 282.

STAT 243. Statistical Theory with Application I. 3 Units.

STAT 244. Statistical Theory with Application II. 3 Units.

STAT 312. Basic Statistics for Engineering and Science. 3 Units.
For advanced undergraduate students in engineering, physical sciences, life sciences. Comprehensive introduction to probability models and statistical methods of analyzing data with the object of formulating statistical models and choosing appropriate methods for inference from experimental and observational data and for testing the model's validity. Balanced approach with equal emphasis on probability, fundamental concepts of statistics, point and interval estimation, hypothesis testing, analysis of variance, design of experiments, and regression modeling. Note: Credit given for only one (1) of STAT 312, 313, 333, 433. Prereq: MATH 122 or equivalent.

STAT 312R. Basic Statistics for Engineering and Science Using R Programming. 3 Units.
For advanced undergraduate students in engineering, physical sciences, life sciences. Comprehensive introduction to probability models and statistical methods of analyzing data with the object of formulating statistical models and choosing appropriate methods for inference from experimental and observational data and for testing the model's validity. Balanced approach with equal emphasis on probability, fundamental concepts of statistics, point and interval estimation, hypothesis testing, analysis of variance, design of experiments, and regression modeling. Note: Credit given for only one (1) of STAT 312, 313, 333, 433. Prereq: MATH 122 or equivalent.

STAT 313. Statistics for Experimenters. 3 Units.
For advanced undergraduates in engineering, physical sciences, life sciences. Comprehensive introduction to modeling data and statistical methods of analyzing data. General objective is to train students in formulating statistical models, in choosing appropriate methods for inference from experimental and observational data and to test the validity of these models. Focus on practicalities of inference from experimental data. Inference for curve and surface fitting to real data sets. Designs for experiments and simulations. Student generation of experimental data and application of statistical methods for analysis. Critique of model; use of regression diagnostics to analyze errors. Note: Credit given for only one (1) of STAT 312, 313, 333, 433. Prereq: MATH 122 or equivalent.

STAT 317. Actuarial Science I. 3 Units.
Practical knowledge of the theory of interest in both finite and continuous time. That knowledge should include how these concepts are used in the various annuity functions, and apply the concepts of present and accumulated value for various streams of cash flows as a basis for future use in: reserving, valuation, pricing, duration, asset/liability management, investment income, capital budgeting, and contingencies. Valuation of discrete and continuous streams of payments, including the case in which the interest conversion period differs from the payment period will be considered. Application of interest theory to amortization of lump sums, fixed income securities, depreciation, mortgages, etc., as well as annuity functions in a broad finance context will be covered. Topics covered include areas examined in the American Society of Actuaries Exam 2. Offered as STAT 317 and STAT 417. Prereq: MATH 122 or MATH 126 or requisites not met permission.

STAT 318. Actuarial Science II. 3 Units.
Theory of life contingencies. Life table analysis for simple and multiple decrement functions. Life and special annuities. Life insurance and reserves for life insurance. Statistical issues for prediction from actuarial models. Topics covered include areas examined in the American Society of Actuaries Exam 3. Offered as STAT 318 and STAT 418. Prereq: STAT 312 or STAT 317 or STAT 345 or requisites not met permission.

STAT 325. Data Analysis and Linear Models. 3 Units.
Basic exploratory data analysis for univariate response with single or multiple covariates. Graphical methods and data summarization, model-fitting using S-plus computing language. Linear and multiple regression. Emphasis on model selection criteria, on diagnostics to assess goodness of fit and interpretation. Techniques include transformation, smoothing, median polish, robust/resistant methods. Case studies and analysis of individual data sets. Notes of caution and some methods for handling bad data. Knowledge of regression is helpful. Offered as STAT 325 and STAT 425. Prereq: STAT 207 or STAT 243 or STAT 312 or EPBI 431 or EPBI 441 or EPBI 458.
STAT 326. Multivariate Analysis and Data Mining. 3 Units.

STAT 332. Statistics for Signal Processing. 3 Units.
For advanced undergraduate students or beginning graduate students in engineering, physical sciences, life sciences. Introduction to probability models and statistical methods. Emphasis on probability as relative frequencies. Derivation of conditional probabilities and memoryless channels. Joint distribution of random variables, transformations, autocorrelation, series of irregular observations, stationarity. Random harmonic signals with noise, random phase and/or random amplitude. Gaussian and Poisson signals. Modulation and averaging properties. Transmission through linear filters. Power spectra, bandwidth, white and colored noise. ARMA processes and forecasting. Optimal linear systems, signal-to-noise ratio, Wiener filter. Completion of additional assignments required from graduate students registered in this course. Offered as STAT 332 and STAT 432. Prereq: MATH 122.

STAT 333. Uncertainty in Engineering and Science. 3 Units.
Phenomena of uncertainty appear in engineering and science for various reasons and can be modeled in different ways. The course integrates the mainstream ideas in statistical data analysis with models of uncertain phenomena stemming from three distinct viewpoints: algorithmic/computational complexity; classical probability theory; and chaotic behavior of nonlinear systems. Descriptive statistics, estimation procedures and hypothesis testing (including design of experiments). Random number generators and their testing. Monte Carlo Methods. Mathematica notebooks and simulations will be used. Note: Credit given for only one (1) of STAT 312, 313, 333, 433. Graduate students are required to do an extra project. Offered as STAT 333 and STAT 433. Prereq: MATH 122 or MATH 223.

STAT 345. Theoretical Statistics I. 3 Units.
Topics provide the background for statistical inference. Random variables; distribution and density functions; transformations, expectation. Common univariate distributions. Multiple random variables; joint, marginal and conditional distributions; hierarchical models, covariance. Distributions of sample quantities, distributions of sums of random variables, distributions of order statistics. Methods of statistical inference. Offered as STAT 345, STAT 445, and EPBI 481. Prereq: MATH 122 or MATH 223 or Coreq: EPBI 431.

STAT 346. Theoretical Statistics II. 3 Units.
Point estimation: maximum likelihood, moment estimators. Methods of evaluating estimators including mean squared error, consistency, "best" unbiased and sufficiency. Hypothesis testing; likelihood ratio and union-intersection tests. Properties of tests including power function, bias. Interval estimation by inversion of test statistics, use of pivotal quantities. Application to regression. Graduate students are responsible for mathematical derivations, and full proofs of principal theorems. Offered as STAT 346, STAT 446 and EPBI 482. Prereq: STAT 345 or STAT 445 or EPBI 481.

STAT 395. Senior Project in Statistics. 3 Units.
An individual project done under faculty supervision involving the investigation and statistical analysis of a real problem encountered in university research or an industrial setting. Written report. Counts as SAGES Senior Capstone.

STAT 412. Statistics for Design and Analysis in Engineering and Science. 3 Units.
For graduate students (primarily) and advanced undergraduates in engineering, physical sciences, and life sciences. After basic statistical concepts are reviewed, the remainder of the course consists of a comprehensive introduction to statistical methods of designing experiments and analyzing data. The general objective is to train students in statistical modeling and in the choice of experimental designs to use in scientific investigations. A variety of experimental designs are covered, and regression analysis is presented as the primary technique for analyzing data from designed experiments, and in discriminating between various possible statistical models. The course is oriented toward graduate students engaged in or embarking on research. Prereq: MATH 122.

STAT 417. Actuarial Science I. 3 Units.
Practical knowledge of the theory of interest in both finite and continuous time. That knowledge should include how these concepts are used in the various annuity functions, and apply the concepts of present and accumulated value for various streams of cash flows as a basis for future use in: reserving, valuation, pricing, duration, asset/liability management, investment income, capital budgeting, and contingencies. Valuation of discrete and continuous streams of payments, including the case in which the interest conversion period differs from the payment period will be considered. Application of interest theory to amortization of lump sums, fixed income securities, depreciation, mortgages, etc., as well as annuity functions in a broad finance context will be covered. Topics covered include areas examined in the American Society of Actuaries Exam 2. Offered as STAT 317 and STAT 417. Prereq: MATH 122 or MATH 126 or requisites not met permission.

STAT 418. Actuarial Science II. 3 Units.
Theory of life contingencies. Life table analysis for simple and multiple decrement functions. Life and special annuities. Life insurance and reserves for life insurance. Statistical issues for prediction from actuarial models. Topics covered include areas examined in the American Society of Actuaries Exam 3. Offered as STAT 318 and STAT 418. Prereq: STAT 312 or STAT 317 or STAT 345 or requisites not met permission.

STAT 425. Data Analysis and Linear Models. 3 Units.
Basic exploratory data analysis for univariate response with single or multiple covariates. Graphical methods and data summarization, model-fitting using S-plus computing language. Linear and multiple regression. Emphasis on model selection criteria, on diagnostics to assess goodness of fit and interpretation. Techniques include transformation, smoothing, median polish, robust/resistant methods. Case studies and analysis of individual data sets. Notes of caution and some methods for handling bad data. Knowledge of regression is helpful. Offered as STAT 325 and STAT 425.

STAT 426. Multivariate Analysis and Data Mining. 3 Units.
STAT 427. Statistical Computing. 3 Units.
Basic topics in statistical computing: floating point arithmetic; seminumerical computations including generation and test of random numbers, Monte Carlo methods, variance reduction methods, stochastic models and simulation studies; numerical computation including numerical linear algebra, optimization and root-finding, numerical integration; some graphical and symbolic computations, special topics in statistical computing: resampling methods, EM algorithms, Gibbs sampling and projection pursuit. Prereq: STAT 345 or STAT 425 or permission of department.

STAT 432. Statistics for Signal Processing. 3 Units.
For advanced undergraduate students or beginning graduate students in engineering, physical sciences, life sciences. Introduction to probability models and statistical methods. Emphasis on probability as relative frequencies. Derivation of conditional probabilities and memoryless channels. Joint distribution of random variables, transformations, autocorrelation, series of irregular observations, stationarity. Random harmonic signals with noise, random phase and/or random amplitude. Gaussian and Poisson signals. Modulation and averaging properties. Transmission through linear filters. Power spectra, bandwidth, white and colored noise. ARMA processes and forecasting. Optimal linear systems, signal-to-noise ratio, Wiener filter. Completion of additional assignments required from graduate students registered in this course. Offered as STAT 332 and STAT 432. Prereq: MATH 122.

STAT 433. Uncertainty in Engineering and Science. 3 Units.
Phenomena of uncertainty appear in engineering and science for various reasons and can be modeled in different ways. The course integrates the mainstream ideas in statistical data analysis with models of uncertain phenomena stemming from three distinct viewpoints: algorithmic/computational complexity; classical probability theory; and chaotic behavior of nonlinear systems. Descriptive statistics, estimation procedures and hypothesis testing (including design of experiments). Random number generators and their testing. Monte Carlo Methods. Mathematica notebooks and simulations will be used. Note: Credit given for only one (1) of STAT 312, 313, 333, 433. Graduate students are required to do an extra project. Offered as STAT 333 and STAT 433. Prereq: MATH 122 or MATH 223.

STAT 437. Stochastic Models: Time Series and Markov Chains. 3 Units.
Introduction to stochastic modeling of data. Emphasis on models and statistical analysis of data with a significant temporal and/or spatial structure. This course will analyze time and space dependent random phenomena from two perspectives: Stationary Time Series: Spectral representation of deterministic signals, autocorrelation. Power spectra. Transmission of stationary signals through linear filters. Optimal filter design, signal-to-noise ratio. Gaussian signals and correlation matrices. Spectral representation and computer simulation of stationary signals. Discrete Markov Chains: Transition matrices, recurrences and the first step analysis. Steady rate. Recurrence and ergodicity, empirical averages. Long run behavior, convergence to steady state. Time to absorption. Eigenvalues and nonhomogeneous Markov chains. Introduction to Gibbs fields and Markov Chain Monte Carlo (MCMC). This course is related to STAT 538 but can be taken independently of it. Offered as: MATH 497 and STAT 437. Prereq: STAT 243/244 (as a sequence) or STAT 312 or STAT 313 or STAT 332 or STAT 333 or STAT 345 or MATH 380 or MATH 491 or Requisites Not Met permission.

STAT 439. Integrated Numerical and Statistical Computations. 3 Units.
This course will embed numerical methods into a Bayesian framework. The statistical framework will make it possible to integrate a priori information about the unknowns and the error in the data directly into the most efficient numerical methods. A lot of emphasis will be put on understanding the role of the priors, their encoding into fast numerical solvers, and how to translate qualitative or sample-based information--or lack thereof--into a numerical scheme. Confidence on computed results will also be discussed from a Bayesian perspective, at the light of the given data and a priori information. The course should be of interest to anyone working on signal and image processing statistics, numerical analysis and modeling. Recommended Preparation: MATH 431. Offered as MATH 439 and STAT 439.

STAT 445. Theoretical Statistics I. 3 Units.
Topics provide the background for statistical inference. Random variables; distribution and density functions; transformations, expectation. Common univariate distributions. Multiple random variables; joint, marginal and conditional distributions; hierarchical models, covariance. Distributions of sample quantities, distributions of sums of random variables, distributions of order statistics. Methods of statistical inference. Offered as STAT 345, STAT 445, and EPBI 481. Prereq: MATH 122 or MATH 223 or Coreq: EPBI 431.

STAT 446. Theoretical Statistics II. 3 Units.
Point estimation: maximum likelihood, moment estimators. Methods of evaluating estimators including mean squared error, consistency, “best” unbiased and sufficiency. Hypothesis testing; likelihood ratio and union-intersection tests. Properties of tests including power function, bias. Interval estimation by inversion of test statistics, use of pivotal quantities. Application to regression. Graduate students are responsible for mathematical derivations, and full proofs of principal theorems. Offered as STAT 346, STAT 446 and EPBI 482. Prereq: STAT 345 or STAT 445 or EPBI 481.

STAT 448. Bayesian Theory with Applications. 3 Units.
Principles of Bayesian theory, methodology and applications. Methods for forming prior distributions using conjugate families, reference priors and empirically-based priors. Derivation of posterior and predictive distributions and their moments. Properties when common distributions such as binomial, normal or other exponential family distributions are used. Hierarchical models. Computational techniques including Markov chain, Monte Carlo and importance sampling. Extensive use of applications to illustrate concepts and methodology. Recommended preparation: STAT 445.

STAT 455. Linear Models. 3 Units.
Theory of least squares estimation, interval estimation and tests for models with normally distributed errors. Regression on dummy variables, analysis of variance and covariance. Variance components models. Model diagnostics. Robust regression. Analysis of longitudinal data. Prereq: MATH 201 and STAT 346 or STAT 446

STAT 491. Graduate Student Seminar. 1 - 2 Unit.
Seminar run collaboratively by graduate students to investigate an area of current research, the topic chosen each semester. All graduate students participate in presentation of material each semester. Satisfies requirement for every full-time graduate student to enroll in a participatory seminar every semester while registered in any graduate degree program. Recommended preparation: Graduate standing.
STAT 495A. Consulting Forum. 1 - 3 Unit.
This course unifies what students have learned in their course work to apply their knowledge in consulting. It recognizes the fact that the essence of the statistical profession is continuing interaction with practitioners in the sciences, engineering, medicine, economics, etc. The course presents the views of prominent experts in the field as obtained from the literature and other sources. The responsibilities of the consultant and the client are discussed. Sample consulting problems are presented and strategies for solving them are provided. Prereq: STAT 325 or STAT 425.

STAT 527. Advanced Statistical Computing. 3 Units.
Special topics drawn from statistical computing, complex system and dynamic computation. Oriented to research. Prereq: STAT 427.

STAT 538. Stochastic Models: Diffusive Phenomena and Stochastic Differential Equations. 3 Units.
Introduction to stochastic modeling of data. Emphasis on models and statistical analysis of data with significant temporal and/or spatial structure. This course will analyze time and space dependent random phenomena from two perspectives: Brownian motion and diffusive processes; Classification of stochastic processes, finite dimensional distributions, random walks and their scaling limits, Brownian motion and its paths properties, general diffusive processes, Fokker-Planck-Kolmogorov equations, Poisson and point processes, heavy tail diffusions, Levy processes, tempered stable diffusions. Stochastic calculus and stochastic differential equations: Wiener random integrals, mean-square theory, Brownian stochastic integrals and Ito formula, stochastic integrals for Levy processes, martingale property, basic theory and applications of stochastic differential equations. This course is related to STAT 437 but can be taken independently of it. Offered as MATH 598 and STAT 538. Prereq: STAT 312 or equivalent.

STAT 601. Reading and Research. 1 - 9 Unit.
Individual study and/or project work.

STAT 621. M.S. Research Project. 1 - 9 Unit.
Completion of statistical design and/or analysis of a research project in a substantive field which requires substantial and/or nonstandard statistical techniques and which leads to results suitable for publication. Written project report must present the context of the research, justify the statistical methodology used, draw appropriate inferences and interpret these inferences in both statistical and substantive scientific terms. Oral presentation of research project may be given in either graduate student seminar or consulting forum.

STAT 651. Thesis M.S.. 1 - 18 Unit.
(Credit as arranged.) May be used as alternative to STAT 621 (M.S. Research Project) in fulfillment of requirements for M.S. degree in Statistics.

STAT 701. Dissertation Ph.D.. 1 - 9 Unit.
(Credit as arranged.) Prereq: Predoctoral research consent or advanced to Ph.D. candidacy milestone.

Department of Modern Languages and Literatures

The Department of Modern Languages and Literatures is committed to helping students become informed and liberally educated citizens of the world. Through the acquisition of language skills and cultural awareness, our students prepare for careers that have an international dimension. To that end, we strongly encourage them to spend their junior year abroad in order to immerse themselves in a foreign culture and perfect their language skills. We also run our own study abroad programs: one German program ("The Munich Experience"), two French programs ("The Paris Experience" and "The Montreal Experience"), three Spanish programs ("The Cuban Experience," "The Buenos Aires Experience" and "Advanced Spanish in Spain"), and one in Italy ("The Italian Experience").

We work closely with other university departments and interdisciplinary programs as well as with the cultural institutions of University Circle to provide students with a broad understanding of the many opportunities that language and culture study offer. The department has strong interdisciplinary ties with the college's programs in Asian studies, French and Francophone studies, German studies, international studies, women's and gender studies, and world literature. Students also gain practical experience in different cultural and language environments through service learning in the Spanish, French, and Russian communities of Cleveland.

Undergraduate Programs

The Department of Modern Languages and Literatures offers courses of study leading to the Bachelor of Arts in French, German, Japanese Studies, and Spanish. In addition, the department offers minors in Chinese, Hebrew, Italian, and Russian, as well as course work in Arabic and Portuguese. Except in the case of courses cross-listed with the World Literature Program and other interdisciplinary programs, all courses in modern languages and literatures are taught primarily in the target language. In addition to class meetings, work outside of class with audio materials is an integral part of all elementary and intermediate language courses taught by the department. Career opportunities exist in college and university teaching, translation and interpretation, diplomatic and other government service, business, international nonprofit agencies, and the arts, and are often enhanced by a double major.

Placement Procedure

Students with prior experience in French, German, or Spanish, however gained (e.g., in high school, with or without AP courses, at another institution, via study abroad), must take a placement examination before the first week of the semester in which they enroll in one of those languages. Placement depends both on examination results and on consultation with individual faculty members.

Majors

French, German, Japanese Studies, and Spanish

Majors in French, German, Japanese Studies, and Spanish are expected: 1) to acquire the ability to understand, speak, read, and write the language(s) of their choice; and 2) to develop a sound understanding of the relevant cultures and literatures. The major in French, German, or Spanish consists of 30-32 hours of course work and will vary based on students' background in the language. The major in Japanese Studies requires a minimum of 35 credit hours. Individual counseling and placement tests are provided by the department.

Course requirements are as follows:

- For students placed into the 200 level: 201-202 and eight courses at the 300 level taught in the target language, or six 300-level courses plus two related courses.
- For students placed into the 300-level: ten 300-level courses taught in the target language, or eight 300-level courses plus two related courses.
Related courses are those outside the department which are closely related to French, German, Japanese, and Spanish cultures, as well as those departmental courses cross-listed with World Literature.

Additional Information for French Major
- Students who take both FRCH 311 and 312 may count only one of these toward the major.
- At least two of the 300-level courses should be numbered above 320 and taught in French.
- At least two courses numbered 320 or higher should be taken in residence at CWRU.

Integrated Graduate Studies (French)
The department participates in the Integrated Graduate Studies Program, which makes it possible to complete both a BA and an MA in French in about five years of full-time study. The department particularly recommends the program to qualified students who are interested in seeking admission to competitive professional schools or PhD programs. Interested students should note the general requirements and the admission procedures listed elsewhere in the general bulletin.

Additional Information for Japanese Major
For additional information for the Japanese major, please see the Japanese Studies Program (p. 186).

Additional Information for Spanish Major
- At least three of the 300-level courses should be numbered above 320.

Spanish subject area requirements

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>SPAN 201</td>
<td>Intermediate Spanish I</td>
<td>4</td>
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<tr>
<td>SPAN 202</td>
<td>Intermediate Spanish II</td>
<td>4</td>
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<tr>
<td>SPAN 308</td>
<td>Advanced Spanish in Spain</td>
<td>3</td>
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<tr>
<td>SPAN 310</td>
<td>Advanced Composition and Reading</td>
<td>3</td>
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<tr>
<td>SPAN 311</td>
<td>Advanced Spanish Conversation</td>
<td>3</td>
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<tr>
<td>SPAN 314</td>
<td>Practice of Translation</td>
<td>3</td>
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<tr>
<td>SPAN 315</td>
<td>Latin American Cultural Conflicts</td>
<td>3</td>
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<tr>
<td>SPAN 316</td>
<td>Studies in Civilization</td>
<td>3</td>
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<tr>
<td>SPAN 317</td>
<td>Contemporary Latin American Culture</td>
<td>3</td>
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<tr>
<td>SPAN 318</td>
<td>Contemporary Spanish Culture</td>
<td>3</td>
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<tr>
<td>SPAN 319</td>
<td>Spanish for Legal Professionals</td>
<td>3</td>
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<tr>
<td>SPAN 320</td>
<td>Introduction to Readings in Hispanic Literature</td>
<td>3</td>
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<tr>
<td>SPAN 322</td>
<td>Latin American Short Story</td>
<td>3</td>
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<tr>
<td>SPAN 331</td>
<td>Spanish Golden Age Literature</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 340</td>
<td>Contemporary Latin-American Narrative</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 342</td>
<td>Latin American Feminist Voices</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 343</td>
<td>The New Drama in Latin American</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 345</td>
<td>Hispanic Autobiographical Writing</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 350</td>
<td>Spanish Fiction</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 351</td>
<td>Hispanic Turn of the Century Literature</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 353</td>
<td>Transatlantic Vanguard</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 358</td>
<td>Latin American Cinema</td>
<td>3</td>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>SPAN 370</td>
<td>Special Topics in Spanish</td>
<td>3</td>
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<tr>
<td>SPAN 385</td>
<td>Hispanic Literature in Translation</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 398</td>
<td>Honors Thesis II</td>
<td>3</td>
</tr>
<tr>
<td>SPAN 399</td>
<td>Independent Study</td>
<td>1 - 3</td>
</tr>
</tbody>
</table>

* Required only for students who begin their Spanish major at the intermediate level.
** Students at the intermediate (200) level select five courses (15 credit hours); students entering the program at the advanced (300) level select seven courses (21 credit hours).

Departmental Honors
The departmental honors program is for especially dedicated majors. Requirements for honors in modern languages and literatures are: 1) a GPA of at least 3.5 in the major, and 2) an honors thesis (FRCH, GRMN, JAPN, or SPAN 397 and 398, beyond the 30-32 hours required for the major) devoted to the investigation of a literary, linguistic, or cultural topic. The thesis is written in the target language, except in the case of Japanese Studies, which may permit papers in English. It must be read and approved by two readers and will be accepted for honors only if it achieves a grade of B or better. Students who qualify receive their degree “with Honors in Modern Languages and Literatures.” A registration form for students electing honors is available in the departmental office.

Minors
Chinese, French, German, Italian, Japanese Studies, Russian, Spanish
Course requirements for the minors are as follows:
- For students placed into the introductory level (no previous knowledge of the language): 101, 102, 201, 202, and one 300-level course (for the French minor, the 300-level course must be taught in the target language).
- For students placed into the 200 level or higher: five courses at the 200 and 300 levels.

Hebrew language courses may also count toward the minor in Judaic Studies.

Graduate Programs
The department offers the Master of Arts degree in French and, together with the Departments of English and Classics, the Master of Arts degree in world literature.
- The standard MA in French requires 27-28 semester hours. An MA in French with a minor concentration in German, Japanese, or Spanish requires 36 hours.
- The MA in world literature requires 27 hours. Full-time students are expected to complete the MA within two academic years.

Department Faculty
Yasuhiro Shirai, PhD
(University of California-Los Angeles)
Eirik Borge Professor in Modern Languages and Chair
First and second language acquisition, applied linguistics, tense and aspect, Japanese linguistics
Christine M. Cano, PhD
(Yale University)
Associate Professor
20th- and 21st-century French literature and culture

Denise Caterinacci, MA
(Kent State University)
Senior Instructor
Italian language and culture; language pedagogy; the role of motivation in language learning

M. Gabriela Copertari, PhD
(Georgetown University)
Associate Professor
Latin American literature and film, especially Argentinean; women's writing; the modernista novel

Margaretmary Daley, PhD
(Yale University)
Associate Professor
18th- and 19th-century German literature; German women writers; women's studies; feminist literary criticism

Gilbert Doho, PhD
(Université Sorbonne Nouvelle-Paris 3)
Associate Professor
French drama; African Francophone theater and film; people theater and social movements; playwriting; African performing arts

Linda C. Ehrlich, PhD
(University of Hawaii/East-West Center)
Associate Professor
Asian (Japanese) cinema; traditional Asian theatre; set design, landscape architecture, and film; Japanese poetry; literature and film; cinema of Spain

Cristián G. Gómez Olivares, PhD
(University of Iowa)
Assistant Professor
20th century Latin American narrative and poetry

Haomin Gong, PhD
(University of California, Davis)
Assistant Professor
Modern Chinese literature and culture

Takao Hagiwara, PhD
(University of British Columbia)
Associate Professor
Japanese literature, especially modern prose and poetry; classical and modern Japanese literature; pre-modern Japanese sensibilities and (post) modernism

Jutta Ittnner, PhD
(University of Hamburg)
Associate Professor
20th-century German literature; contemporary women writers; poetry; literary translation; German culture; representation of animals in contemporary literature

Marie Lathers, PhD
(Brown University)
Elizabeth M. and William C. Treuhaft Professor of Humanities
Women and the visual arts; 19th-century French literature and the arts (painting, sculpture, photography, film); gender, science, and technology; feminist theory; space studies

Jacqueline C. Nanfito, PhD
(University of California, Los Angeles)
Associate Professor
Colonial and 19th-century Latin American literature; Golden Age Hispanic literature; literary theory; Chicano literature; contemporary Latin American women writers

Damaris Punaes-Alpizar, PhD
(University of Iowa)
Assistant Professor
20th-century Latin American literature; Latin American cinema; Cuban cinema; contemporary Cuban and Caribbean narrative; 19th- and 20th-century Latin American poetry; 20th-century peninsular literature

Cheryl Toman, PhD
(University of Illinois, Urbana-Champaign)
Associate Professor
African and Middle Eastern Francophone literature, especially Cameroon; women's writing; immigrant communities in France

Susanne Vees-Gulani, PhD
(University of Illinois, Urbana-Champaign)
Associate Professor
20th- and 21st-century literature and literary movements; German cultural studies; science and literature; medicine and literature; trauma studies; victim discourses; literary and cultural responses to World War II; German civil defense strategies in World War II

Peter Jianhua Yang, PhD
(University of Utah)
Associate Professor
German literature, emphasis on 20th-century German literature; German theater; technology-enhanced language teaching; teaching pedagogy; business German; theatricality

Tatiana Zilotina, PhD
(University of Virginia)
Instructor
19th- and 20th-century Russian literature; the poetry of Marina Tsvetaeva; women writers; Russian culture; Russian folklore

Lecturers

Man-Lih Chai, MA
(University of Illinois, Urbana-Champaign)
Full-time Lecturer (Chinese)

Yoram Daon, MBA
(Keller Graduate School of Management, DeVry University)
Full-time Lecturer (Hebrew)

Elena Fernández, MA
(Cleveland State University)
Full-time Lecturer (Spanish)
ARAB Courses

ARAB 101. Beginning Arabic I. 4 Units.
The course introduces learners of Arabic to the sound and writing systems of this language and provides them with basic structural and lexical knowledge to enable them to say things in Arabic, such as greeting others, thanking someone, introducing oneself, describing one's background, seeking and providing info and so forth. The ability to perform these language functions in real-life or lifelike situations is developed by engaging the learner in structured functional activities and grammatical exercises.

ARAB 102. Beginning Arabic II. 4 Units.
ARAB 102 builds on the proficiency that students should have acquired in ARAB 101. The course follows a student-centered communicative approach in which class time is used in active learning through pair or group activities, role-play, games, selective listening and reading and other activities. The course emphasizes the four basic skills, reading, speaking, listening and writing. Students will be exposed to real audiovisual material in order to enhance comprehension and they will have to develop short oral and written responses about it. Aspects of culture across the Arab world will be included as an element of learning the language. Recommended preparation: ARAB 101

ARAB 201. Intermediate Arabic I. 4 Units.
Intensive review of grammar and conversational skills in modern Arabic through readings, discussions and other activities that explore contemporary Arab life and culture. Recommended preparation: ARAB 102 or equivalent.

ARAB 202. Intermediate Arabic II. 4 Units.
ARAB 202 is a continuation of ARAB 201 and will enable the students to develop advanced communicative skills for the use of Modern Arabic. It will focus on speaking, listening, reading and writing skills, and emphasize creative use of the language. Recommended preparation: ARAB 201 or equivalent.

ARAB 301. Advanced Arabic I. 3 Units.
This is a higher level of Arabic study. The course objectives are to enhance the student's language skills and to develop ability to use high-level Arabic effectively. It is designed to help students move from the intermediate level of proficiency, which centers on daily life and the immediate world, to the advanced, which broadens to include topics of general and professional interest. Recommended preparation: ARAB 202 or equivalent.

ARAB 337. Women in the Arab World. 3 Units.
The purpose of this course is twofold: It is a course that allows students an in-depth look at the diverse women who represent a number of cultures in the Arab world in nations from the Mashrek to the Maghreb. The second primary goal of the course is to study such women through the eyes of leading Arab women theorists who have made an impact not only in their own countries, but also on disciplines intersecting with women's studies worldwide. We will study the Arab woman's place in her respective society, in political and economic systems, in education, and in the family. We will also analyze her contributions to art and literature as well as to the sciences. The course will provide an overview of the Arab woman throughout history, from her origins to her place within recent movements within the Arab Spring and other current world events. As Arab women are Muslim, Christian, and Jewish, views of women within these major world religions will also be taken into account as we study the Arab woman as well as religion's impact on culture in the Middle East and in the Maghreb in particular. In the course, we will utilize theoretical texts, but also case studies as well as examples from media and the arts. During the semester, we will take advantage of teleconferencing opportunities between CWRU and two major academic units for Women's Studies in the Arab world: The Institute for Women's Studies in the Arab World (IWSAW) in Beirut, Lebanon, and the University of Jordan's Center for Women's Studies in Amman. Offered as FRCH 337, FRCH 437, ARAB 337, ETHS 337 and WGST 337.

ARAB 349. The Arab World Experience. 3 Units.
Taught and led by Case faculty, The Arab World Experience is a spring semester course with a spring break study abroad component in a Middle Eastern or North African country supplemented by course meetings before and after travel. It will rotate among countries such as Jordan, Lebanon, Morocco, etc. and be taught by faculty with appropriate area expertise in Arabic, Women's and Gender Studies, and/or Ethnic Studies. The course focuses on topics such as history, politics, culture, and gender relations within the society of study. Workload and learning outcomes are commensurate with a semester-long three credit hour course. Guest lectures in the host country are an important component of the course as they bring a fresh, authentic perspective to the aforementioned topics discussed. There will be three three-hour meetings prior to travel, required reading, and one three-hour meeting after travel. In the host country, students will spend seven days (five-eight hours per day) in seminars, discussions, and site visits. Student grades are determined on the basis of participation, attendance, a daily experiential learning journal, interviews with guest speakers, and a final exam. Offered as ARAB 349, ETHS 349 and WGST 349.

ARAB 399. Independent Study in Arabic. 1 - 3 Unit.
Topics will be constructed to fit the interest of a student who has already taken an advanced course in Arabic. Prereq: ARAB 301.
CHIN Courses

CHIN 101. Elementary Chinese I. 4 Units.
Introductory course in speaking, understanding, reading and writing Chinese. Students are expected to achieve control of the sound system and basic sentence patterns of standard Mandarin Chinese. The course emphasizes speaking and aural comprehension.

CHIN 102. Elementary Chinese II. 4 Units.
Continuation of CHIN 101. Recommended preparation: Consent of department.

CHIN 201. Intermediate Chinese I. 4 Units.
Emphasizes basic structures of standard Mandarin Chinese; helps students improve reading, writing, listening and speaking abilities. Chinese culture, society, and people introduced through supplementary materials and activities. Recommended preparation: CHIN 102 or equivalent.

CHIN 202. Intermediate Chinese II. 4 Units.
Continuation of CHIN 201. Students must use course material offered by the Online Language Learning Center in addition to class meetings. Recommended preparation: CHIN 201.

CHIN 203. Intermediate Chinese III. 4 Units.
As the continuation of CHIN 202, CHIN 203 is the third course at the intermediate level in Chinese language at CWRU. In this course, students focus on conversation combined with further study of grammatical and syntactic rules, and of cultural elements. The objective is a further development of communicative skills in listening, speaking, reading, and writing. Upon completion of this course, students' proficiency will be optimal for entering CHIN 301. The course is a 4 credit course.
The course uses integrated Chinese Level 2, Part 1, from the same series of textbooks for CHIN 201 and 202. The course covers 7 lessons of the book, two weeks for each lesson, in average. Students are expected to preview each lesson before class, to complete the assigned homework, and to study after class the content covered that day. The final grade will be based on the mid-term and final exams, and on quizzes. There will be a quiz at the end of each lesson. Chinese word-processing ability is one of the objectives of this course. Students will learn how to type Chinese texts using the Pinyin input method. Prereq: CHIN 202, or two years of study, or requisites not met permission.

CHIN 240. Modern Chinese Literature in Translation. 3 Units.
This course examines Modern Chinese Literature from the beginning of the 20th century to contemporary period in the contexts of Chinese historical and cultural transformations. It examines representative works of the major literary genres, including fiction, poetry, drama, and prose writing. We will be making the following inquiries: What is modern Chinese literature? What does it tell us about the cultural, social, psychological, and historical changes that occurred in modern China? Who are the main literary and cultural figures, and what did they contribute to the construction of the Chinese nation? How did Western thoughts impact on the ways in which Chinese reflected on their own cultural identities and social and gender relationships? This course is taught in English.

CHIN 250. Classical Chinese Literature in Translation. 3 Units.
This course is a survey of the classical Chinese literature from the pre-Qin Period to the fall of Qing Dynasty in 1911. Students will be introduced to a variety of forms and genres, including classical poetry, lyric, aria, elegy, rhapsody, folk song, narrative verse, parallel prose, classical-language short story, vernacular short story, novel, drama, etc. This course is taught in English.

CHIN 301. Advanced Chinese I. 4 Units.
Students work to achieve fluency in listening, speaking, reading and writing. Students must attend Language Resource Center in addition to class meetings. Recommended preparation: CHIN 202 or equivalent.

CHIN 302. Advanced Chinese II. 4 Units.
Continuation of CHIN 301.

CHIN 303. Topics in Chinese. 3 Units.

CHIN 304. Topics in Chinese. 3 Units.

CHIN 315. Business Chinese. 3 Units.
The Business Chinese course is designed to enhance students' listening, speaking, reading, and writing skills in Chinese through a variety of activities. It will focus on China's contemporary international business issues and practices. At the end of the semester, the students will have a basic knowledge of China's socio-cultural values, trade policy, and role in the world economy after its entry into the WTO and the ability to hold conversations on selected business topics with correct business vocabulary and in a culturally appropriate manner; to read business-related materials; and to write basic business communications including letters, reports and resumes. It is taught in Chinese and English. Offered as CHIN 315 and CHIN 415. Prereq: CHIN 202 or equivalent.

CHIN 320. Chinese Popular Culture. 3 Units.
In this course we are going to study Chinese (including Mainland China, Hong Kong, Taiwan, and Chinese Diaspora) popular culture since the 1980s. By examining different forms of popular culture, including popular literature, film, music, TV programs, posters, the Internet, etc., we will be looking into their political, ideological, sociological, cultural, and psychological mechanisms. The film viewing will take place outside the class.

CHIN 330. Chinese Cinema. 3 Units.
This course is an exploration to the history of and critical issues in Chinese cinema: we will discuss early film making in Shanghai, leftist melodrama, Socialist films, the Chinese New Wave, underground films, the film making in the era of globalization, and etc. Themes and genres that will be investigated include melodrama, the "Fifth Generation", underground film making, filmic representations of women, minority films, and historical epics. Films from mainland China, Hong Kong, Taiwan, and diasporic communities will be discussed to illuminate what it means to be "Chinese." All of the films in this course come with English subtitles; the film viewing will take place outside the class.

CHIN 380. Contemporary Chinese Texts I. 3 Units.
This course is designed for students who have completed CHIN 302 or equivalent. It provides intensive trainings in communicational skills by reading, watching, and discussing a variety of texts. Prereq: CHIN 302 or equivalent.

CHIN 381. Contemporary Chinese Texts II. 3 Units.
This course is designed for students who have completed CHIN 380 or equivalent. It provides intensive training in communication skills by reading, watching, and discussing a variety of texts. Prereq: CHIN 380.
CHIN 399. Independent Study. 1 - 3 Unit.
Directed study for those students who have progressed beyond available course offerings and want to continue study of Chinese language, Chinese culture, Chinese literature, or other Chinese Studies topics in Chinese. Prereq: CHIN 302.

CHIN 415. Business Chinese. 3 Units.
The Business Chinese course is designed to enhance students’ listening, speaking, reading, and writing skills in Chinese through a variety of activities. It will focus on China’s contemporary international business issues and practices. At the end of the semester, the students will have a basic knowledge of China’s socio-cultural values, trade policy, and role in the world economy after its entry into the WTO and the ability to hold conversations on selected business topics with correct business vocabulary and in a culturally appropriate manner; to read business-related materials; and to write basic business communications including letters, reports and resumes. It is taught in Chinese and English. Offered as CHIN 315 and CHIN 415. Prereq: CHIN 202 or equivalent.

FRCH Courses

FRCH 101. Elementary French I. 4 Units.
Emphasizes conversational skills. Students are expected to achieve control of sound system and basic sentence structures of French. Students must complete assignments at the Online Language Learning Center in addition to attending scheduled class meetings.

FRCH 102. Elementary French II. 4 Units.

FRCH 201. Intermediate French I. 4 Units.
Intensive review of grammar and usage through readings, discussions and other activities that emphasize contemporary French life. Students must complete assignments at the Online Language Learning Center in addition to attending scheduled class meetings. Recommended preparation: FRCH 102 or equivalent.

FRCH 202. Intermediate French II. 4 Units.
A continuation of FRCH 201, the course focuses on the acquisition of intermediate-level skills in language and culture. Students must complete assignments at the Online Language Learning Center in addition to attending scheduled class meetings. Recommended preparation: FRCH 201 or equivalent.

FRCH 208. The Montreal Experience. 1 Unit.
One-week immersion learning experience performing community service in Montreal, Canada. Students meet several times for orientation before spending spring break in French-speaking Montreal. Community service may include volunteering in a homeless center, a hospital, or school. Application available from Department office. This course may be repeated once. Permit required. Prereq or Coreq: FRCH 202 or equivalent.

FRCH 295. The Francophone World. 3 Units.
The course offers an introduction to the Francophone World from a historical, cultural, and literary perspective. The Francophone World includes countries and regions around the globe with a substantial French-speaking population (and where French is sometimes, but not always, an official language): North America (Louisiana, Quebec, and Acadia); North Africa (Tunisia, Morocco, Algeria, and Egypt); the Middle-East (Lebanon, Syria); the Caribbean (Martinique, Guadeloupe, Haiti); Southeast Asia (Vietnam); and Europe (France, Belgium, Switzerland, and Luxembourg). FRCH 295 provides a comprehensive overview of the Francophone World, while focusing on a particular area or areas in any given semester. Offered as ETHS 295, FRCH 295, and WLIT 295.

FRCH 306. The Paris Experience. 3 Units.
Three-week immersion learning experience living and studying in Paris. The focus of the course is the literature and culture of the African, Arab, and Asian communities of Paris. Students spend a minimum of fifteen hours per week visiting cultural centers and museums and interviewing authors and students about the immigrant experience. Assigned readings complement course activities. Students enrolled in FRCH 308/408 do coursework in French. WLIT 308/408 students have the option of completing coursework in English. Graduate students have additional course requirements. Offered as FRCH 308, WLIT 308, FRCH 408, and WLIT 408. Prereq: FRCH 202.

FRCH 310. Advanced Composition and Reading. 3 Units.
An initiation to the literature of Francophone expression with a focus on close reading. Texts may include short stories, essays, and novels. Students engage in the discussion of their readings and learn how to express their ideas both orally and in written form. Prereq: FRCH 202 or equivalent.

FRCH 311. Advanced Conversation I. 3 Units.
Designed to enhance pronunciation, speaking and listening comprehension through the discussion of French literature and media for children. Required for Teacher Licensure candidates. Prereq: FRCH 202 or equivalent.

FRCH 312. Advanced Conversation II. 3 Units.
A functional approach to conversation. Students work to develop fluency in spoken French using current colloquial vocabulary and focusing on current issues. Practice in using speech appropriate to a variety of situations, including public debates. Prereq: FRCH 202 or equivalent.

FRCH 313. Medical French. 3 Units.
Medical French is an upper-level course with a focus on health care in France and other Francophone countries. Students gain knowledge of the health care structures of various Francophone countries, as well as the vocabulary used in professional medical communication. Special emphasis on Doctors without Borders (Medecins sans frontieres). There will be visits to local hospitals and health care sites. Press articles, media reports, films, videos, and short literary texts are used as resources. Offered as FRCH 313 and FRCH 413. Prereq: FRCH 202 or equivalent.

FRCH 314. Translation Techniques. 3 Units.
Contrastive grammar analysis and stylistics are used to foster linguistic awareness and to introduce students to the methods and skills of translation. Recommended preparation: FRCH 310. Prereq: FRCH 202.

FRCH 315. Business French. 3 Units.
Business French is an upper-level course with a focus on the economic life of France and other Francophone countries. Students gain knowledge of the economic structures and the business organization of Francophone countries as they enhance the linguistic skills used in professional communication. Prereq: FRCH 202 or equivalent.

FRCH 316. Contemporary France. 3 Units.
A study of contemporary France, this course features discussions and lectures on a variety of topics (geography, political and social life, contemporary culture) to develop factual knowledge about France and a sound understanding of current issues as presented in the media. Prereq: FRCH 202 or equivalent.

FRCH 317. French Cinema. 3 Units.
FRCH 318. The Origins of France. 3 Units.
Examination through texts, films, and other media of major historical, intellectual, and artistic influences that have shaped the evolution of French civilization. Students will attempt to identify the values and myths that have contributed to the ongoing formation of modern France. Recommended preparation: FRCH 310. Prereq: FRCH 202.

FRCH 319. Modern France. 3 Units.
A study of France’s political, social and cultural history from the French Revolution to World War II, with emphasis on the events, movements, and people that have shaped Modern France. Highly recommended for students of Nineteenth- and Twentieth-Century French culture. Recommended preparation: FRCH 310. Prereq: FRCH 202.

FRCH 320. Introduction to French Literature. 3 Units.
Taught in French. An introduction to literary analysis through the study of important works of French literature. Written assignments are designed to develop skills in close reading, to introduce students to literary terminology in French, and to develop a capacity for clear, precise communication of an argument. Classes are discussion-based. Recommended preparation: FRCH 310. Counts as SAGES Departmental Seminar. Prereq: FRCH 202 or equivalent.

FRCH 321. Twelfth to Sixteenth-Century French Literature. 3 Units.
Medieval and Renaissance literature, from the chanson de geste and the roman courtois to Rabelais and Montaigne. Authors, works and topics may vary. May be offered on both Medieval and Renaissance, or on either. May be repeated if time period is different. Maximum 6 credits. Offered as: FRCH 321 and FRCH 421. Prereq: FRCH 202. Coreq: FRCH 320.

FRCH 331. Seventeenth-Century French Literature. 3 Units.
The Age of Classicism, from Racine to Mme de Lafayette. Authors, works and topics may vary. Prereq: FRCH 320.

FRCH 335. Women in Developing Countries. 3 Units.
This course will feature case studies, theory, and literature of current issues concerning women in developing countries primarily of the French-speaking world. Discussion and research topics include matriarchal traditions and FGM in Africa, the Tunisian feminist movement, women, Islam, and tradition in the Middle East, women-centered power structures in India (Kerala, Pondicherry), and poverty and women in Vietnam, Laos, and Cambodia. Guest speakers and special projects are important elements of the course. Seminar-style format, taught in English, with significant disciplinary writing in English for WGST, ETHS, and some WLIT students, and writing in French for FRCH and WLIT students. Writing assignments include two shorter essays and a substantial research paper. Offered as ETHS 335, FRCH 335, WLIT 335, WGST 335, FRCH 435 and WLIT 435. Counts as SAGES Departmental Seminar.

FRCH 337. Women in the Arab World. 3 Units.
The purpose of this course is twofold: It is a course that allows students an in-depth look at the diverse women who represent a number of cultures in the Arab world in nations from the Mashrek to the Maghreb. The second primary goal of the course is to study such women through the eyes of leading Arab women theorists who have made an impact not only in their own countries, but also on disciplines intersecting with women’s studies worldwide. We will study the Arab woman’s place in her respective society, in political and economic systems, in education, and in the family. We will also analyze her contributions to art and literature as well as to the sciences. The course will provide an overview of the Arab woman throughout history, from her origins to her place within recent movements within the Arab Spring and other current world events. As Arab women are Muslim, Christian, and Jewish, views of women within these major world religions will also be taken into account as we study the Arab woman as well as religion’s impact on culture in the Middle East and in the Maghreb in particular. In the course, we will utilize theoretical texts, but also case studies as well as examples from media and the arts. During the semester, we will take advantage of teleconferencing opportunities between CWRU and two major academic units for Women’s Studies in the Arab world: The Institute for Women’s Studies in the Arab World (IWSAW) in Beirut, Lebanon, and the University of Jordan’s Center for Women’s Studies in Amman. Offered as FRCH 337, FRCH 437, ARAB 337, ETHS 337 and WGST 337.

FRCH 338. The Cameroon Experience. 3 Units.
Three-week immersion learning experience living and studying in Cameroon. The focus of the course is the culture, literature, and language of Francophone Cameroon, with some emphasis on Anglophone Cameroon. Students spend a minimum of fifteen hours per week visiting cultural sites and attending arranged courses at the University of Buea. Students will prepare a research paper. Coursework is in French. To do coursework in English, students should enroll in WLIT 338/438 or ETHS 338/438. Offered as ETHS 338, FRCH 338, WLIT 338, ETHS 438, FRCH 438, and WLIT 438. Prereq: FRCH 202.

FRCH 341. Eighteenth Century French Literature. 3 Units.
Topics from the Age of Enlightenment, from libertinage to revolution. Authors and works may vary. Offered as FRCH 341 and FRCH 441. Prereq or Coreq: FRCH 320.

FRCH 351. Nineteenth-Century French Literature. 3 Units.
Romanticism, realism, and naturalism in the novel and the dramatic tradition. Authors, works, and topics may vary. Offered as FRCH 351 and FRCH 451. Prereq or Coreq: FRCH 320.

FRCH 372. Topics in French Drama. 3 Units.
A topical approach to issues and problems specific to drama. Plays, playwrights, aesthetic theories, and historical periods studied in this course may vary. Offered as FRCH 372 and FRCH 472. Prereq or Coreq: FRCH 320.

FRCH 373. The Novel and the Novella. 3 Units.
A study of narrative fiction focused on either a particular genre (the novel, the short story) or a particular type of novel (psychological novel, realist novel, detective novel), tale (the fantastic tale, the fairytale), or novella. Offered as FRCH 373 and FRCH 473. Prereq or Coreq: FRCH 320.

FRCH 374. Major Writers and Literary Movements. 3 Units.
In-depth study of the work of a major writer, film director, or intellectual figure; or of a significant literary, intellectual, or artistic movement. Approaches, content, and instructor will vary. Offered as FRCH 374 and FRCH 474. Prereq: FRCH 320.
FRCH 375. Francophone Literature. 3 Units.
An examination of Francophone literature focused on the problematics of identity within the colonial and post-colonial context. Writers and works may vary. Offered as FRCH 375 and FRCH 475. Prereq or Coreq: FRCH 320.

FRCH 376. Women Writers. 3 Units.
An examination of important literary texts by French and Francophone women writers. Critical essays are also studied to introduce historical and theoretical perspectives. Offered as FRCH 376 and FRCH 476. Prereq or Coreq: FRCH 320.

FRCH 377. Special Topics. 3 Units.
The special topics course is designed to provide a forum for specific themes or subjects not otherwise covered in the curriculum. Approaches and content will vary. Maximum 6 credits. Offered as FRCH 377 and FRCH 477. Prereq or Coreq: FRCH 320.

FRCH 395. French Literature in Translation. 3 Units.
Topics vary according to student and faculty interest. May include Francophone literature, literature and cinema, women writers, contemporary literature. Counts toward French major only as related course. No knowledge of French required. Offered as FRCH 395, WLIT 395, FRCH 495, and WLIT 495.

FRCH 396. Senior Capstone - French. 3 Units.
The Senior Capstone in French is an independent study project chosen in consultation with a capstone advisor. The capstone project should reflect both the student's interest within French and/or Francophone Studies and the courses he or she has taken to fulfill the major. The project requires independent research using an approved bibliography and plan of action. In addition to written research, the student will also present the capstone project in a public forum that is agreed upon by the project advisor and the student. Counts as SAGES Senior Capstone. Prereq: Senior status required. Major in French or Francophone Studies required.

FRCH 397. Honors Thesis I. 3 Units.
Intensive study of a literary, linguistic, or cultural topic with a faculty member, leading to the writing of a research paper in French. Limited to senior majors. Permit required.

FRCH 398. Honors Thesis II. 3 Units.
Continuation of FRCH 397. Limited to senior majors. Permit required. Prereq: FRCH 397.

FRCH 399. Independent Study. 1 - 3 Unit.
The course is for students who have special interests and commitments that are not addressed in regular courses, and who wish to work independently.

FRCH 408. The Paris Experience. 3 Units.
Three-week immersion learning experience living and studying in Paris. The focus of the course is the literature and culture of the African, Arab, and Asian communities of Paris. Students spend a minimum of fifteen hours per week visiting cultural centers and museums and interviewing authors and students about the immigrant experience. Assigned readings complement course activities. Students enrolled in FRCH 308/408 do coursework in French. WLIT 308/408 students have the option of completing coursework in English. Graduate students have additional course requirements. Offered as FRCH 308, WLIT 308, FRCH 408, and WLIT 408. Prereq: Graduate standing.

FRCH 413. Medical French. 3 Units.
Medical French is an upper-level course with a focus on health care in France and other Francophone countries. Students gain knowledge of the health care structures of various Francophone countries, as well as the vocabulary used in professional medical communication. Special emphasis on Doctors without Borders (Medecins sans frontieres). There will be visits to local hospitals and health care sites. Press articles, media reports, films, videos, and short literary texts are used as resources. Offered as FRCH 313 and FRCH 413. Prereq: Graduate Standing.

FRCH 421. Twelfth to Sixteenth-Century French Literature. 3 Units.
 Medieval and Renaissance literature, from the chanson de geste and the roman courtois to Rabelais and Montaigne. Authors, works and topics may vary. May be offered on both Medieval and Renaissance, or on either. May be repeated if time period is different. Maximum 6 credits. Offered as: FRCH 321 and FRCH 421. Prereq: Graduate Standing.

FRCH 435. Women in Developing Countries. 3 Units.
This course will feature case studies, theory, and literature of current issues concerning women in developing countries primarily of the French-speaking world. Discussion and research topics include matriarchal traditions and FGM in Africa, the Tunisian feminist movement, women, Islam, and tradition in the Middle East, women-centered power structures in India (Kerala, Pondichery), and poverty and women in Vietnam, Laos, and Cambodia. Guest speakers and special projects are important elements of the course. Seminar-style format, taught in English, with significant disciplinary writing in English for WGST, ETHS, and some WLIT students, and writing in French for FRCH and WLIT students. Writing assignments include two shorter essays and a substantial research paper. Offered as ETHS 335, FRCH 335, WLIT 335, WGST 335, FRCH 435 and WLIT 435. Counts as SAGES Departmental Seminar.

FRCH 437. Women in the Arab World. 3 Units.
The purpose of this course is twofold: It is a course that allows students an in-depth look at the diverse women who represent a number of cultures in the Arab world in nations from the Mashrek to the Maghreb. The second primary goal of the course is to study such women through the eyes of leading Arab women theorists who have made an impact not only in their own countries, but also on disciplines intersecting with women's studies worldwide. We will study the Arab woman's place in her respective society, in political and economic systems, in education, and in the family. We will also analyze her contributions to art and literature as well as to the sciences. The course will provide an overview of the Arab woman throughout history, from her origins to her place within recent movements within the Arab Spring and other current world events. As Arab women are Muslim, Christian, and Jewish, views of women within these major world religions will also be taken into account as we study the Arab woman as well as religion's impact on culture in the Middle East and in the Maghreb in particular. In the course, we will utilize theoretical texts, but also case studies as well as examples from media and the arts. During the semester, we will take advantage of teleconferencing opportunities between CWRU and two major academic units for Women's Studies in the Arab world: The Institute for Women's Studies in the Arab World (IWSAW) in Beirut, Lebanon, and the University of Jordan's Center for Women's Studies in Amman. Offered as FRCH 337, FRCH 437, ARAB 337, ETHS 337 and WGST 337.
FRCH 438. The Cameroon Experience. 3 Units.
Three-week immersion learning experience living and studying in Cameroon. The focus of the course is the culture, literature, and language of Francophone Cameroon, with some emphasis on Anglophone Cameroon. Students spend a minimum of fifteen hours per week visiting cultural sites and attending arranged courses at the University of Buea. Students will prepare a research paper. Coursework is in French. To do coursework in English, students should enroll in WLIT 338/438 or ETHS 338/438. Offered as ETHS 338, FRCH 338, WLIT 338, ETHS 438, FRCH 438, and WLIT 438.

FRCH 441. Eighteenth Century French Literature. 3 Units.
Topics from the Age of Enlightenment, from libertinage to revolution. Authors and works may vary. Offered as FRCH 341 and FRCH 441.

FRCH 451. Nineteenth-Century French Literature. 3 Units.
Romanticism, realism, and naturalism in the novel and the dramatic tradition. Authors, works, and topics may vary. Offered as FRCH 351 and FRCH 451.

FRCH 461. Twentieth-Century French Literature. 3 Units.
A study of representative novelists (e.g., Proust, Gide, Colette, Sartre, Beauvoir) and playwrights (e.g., Claudel, Beckett, Genet) in historical context. Authors, works, and topics may vary. Offered as FRCH 361 and FRCH 461.

FRCH 472. Topics in French Drama. 3 Units.
A topical approach to issues and problems specific to drama. Plays, playwrights, aesthetic theories, and historical periods studied in this course may vary. Offered as FRCH 372 and FRCH 472.

FRCH 473. The Novel and the Novella. 3 Units.
A study of narrative fiction focused on either a particular genre (the novel, the short story) or a particular type of novel (psychological novel, realist novel, detective novel), tale (the fantastic tale, the fairytale), or novella. Offered as FRCH 373 and FRCH 473.

FRCH 474. Major Writers and Literary Movements. 3 Units.
In-depth study of the work of a major writer, film director, or intellectual figure; or of a significant literary, intellectual, or artistic movement. Approaches, content, and instructor will vary. Offered as FRCH 374 and FRCH 474. Prereq: Graduate standing.

FRCH 475. Francophone Literature. 3 Units.
An examination of Francophone literature focused on the problematics of identity within the colonial and post-colonial context. Writers and works may vary. Offered as FRCH 375 and FRCH 475.

FRCH 476. Women Writers. 3 Units.
An examination of important literary texts by French and Francophone women writers. Critical essays are also studied to introduce historical and theoretical perspectives. Offered as FRCH 376 and FRCH 476.

FRCH 477. Special Topics. 3 Units.
The special topics course is designed to provide a forum for specific themes or subjects not otherwise covered in the curriculum. Approaches and content will vary. Maximum 6 credits. Offered as FRCH 377 and FRCH 477.

FRCH 495. French Literature in Translation. 3 Units.
Topics vary according to student and faculty interest. May include Francophone literature, literature and cinema, women writers, contemporary literature. Counts toward French major only as related course. No knowledge of French required. Offered as FRCH 395, WLIT 395, FRCH 495, and WLIT 495. Coreq: Graduate standing.

FRCH 590. Seminar: Topics in Modern Literature and Culture. 3 Units.
French literature and culture since the Revolution of 1789. Topics vary depending on student and instructor interests; may include realism and naturalism, Proust, contemporary film, or French philosophy. Maximum 9 credits. Prereq: Graduate standing.

FRCH 595. Independent Research. 1 - 3 Unit.
Graded independent work on a literary topic arranged individually with the instructor. Prereq: Graduate standing.

FRCH 601. Independent Study. 1 - 18 Unit.
For individual students or larger groups with special interests.

FRCH 651. Thesis M.A.. 6 - 9 Unit.
Thesis M.A. serves the graduate plan A of the Graduate Handbook.

GRMN Courses

GRMN 101. Elementary German I. 4 Units.
Introductory course emphasizing conversational skills. Students achieve control of the sound system and basic sentence structures of spoken and written German. Students must use the course material offered by the Online Language Learning Center in addition to class meetings.

GRMN 102. Elementary German II. 4 Units.
Continuation of GRMN 101, emphasizing conversational skills. Prereq: GRMN 101 or equivalent.

GRMN 201. Intermediate German I. 4 Units.
Emphasizes both language and culture and is taught in German. Review of grammar and usage of German while studying texts and videotapes which focus on contemporary life in Germany. Prereq: GRMN 102 or equivalent.

GRMN 202. Intermediate German II. 4 Units.
Continuation of GRMN 201; conducted in German. Study of texts and videotapes which focus on contemporary life in Germany. Prereq: GRMN 201 or equivalent.

GRMN 303. German Culture & Civilization. 3 Units.
Examines aspects of contemporary Germany, including political and social systems and cultural life through seminar discussions of texts, films, and other media. Along with oral presentations and essay tests, students must select a research topic of interest to the discipline and write an analytic essay in German on the topic. Counts as SAGES Departmental Seminar. Prereq: GRMN 202.

GRMN 308. The Munich Experience: Spring Course/Summer Study Advanced Level. 3 Units.
A semester seminar class, conducted in German, which culminates with a three-week immersion learning experience spent living and studying in Munich. Students reside with German families, study German daily in a formal setting, and practice comprehension, speaking, reading, and writing. Regular visits to museums, galleries, and cultural events; first-hand observation of history, life, and architecture of a major cultural center; day trips to cultural phenomena and events in the German countryside. Prereq or Coreq: GRMN 202 or equivalent.
GRMN 310. Advanced German Reading and Composition. 3 Units.
An advanced-level skills course focusing on reading and writing for students who have already studied intermediate German. Develops abilities to read authentic, unabridged texts, such as contemporary newspaper and magazine articles; readings increase progressively in length and vary in genre. Also practices composition skills by composing academic prose such as objective summaries, reviews, precision, letters, short creative texts, and analytic written forms such as short essays to produce increasingly sophisticated analytical compositions in German. Includes instruction on use of English- and German-language research tools, German-German dictionaries, and study guides. Taught in German. Counts as SAGES Departmental Seminar. Prereq: GRMN 202 or equivalent.

GRMN 311. Advanced Conversation. 3 Units.
Students work to improve fluency in spoken German. Topics include contemporary issues; current vocabulary is stressed. Students practice using speech appropriate to various situations. Prereq: GRMN 202 or equivalent.

GRMN 312. German Proficiency Through Drama. 3 Units.
Readings begin with single scenes and progress to full-length radio plays and theater plays which gradually increase in linguistic difficulty and complexity of central themes. Introduction to the elements of drama such as dialogue, character and dramatic structure, as well as the genres of tragedy, comedy, and tragi-comedy. Focus: effective communication of critical, interpretive, and analytic ideas in discussion and in writing. Counts as SAGES Departmental Seminar. Prereq: GRMN 202 or equivalent.

GRMN 313. Intro to German Literature. 3 Units.
Introduction to German literature and the cultural issues it addresses. Readings include the main literary and folk genres (short texts or excerpts), gradually increasing in linguistic difficulty and complexity of central themes. They cover the major literary periods from the 18th to the 21st centuries. Focus: effective communication of critical, interpretive, and analytic ideas in discussion and in writing. Counts as SAGES Departmental Seminar. Prereq: GRMN 202 or equivalent.

GRMN 315. Business German. 3 Units.
This course is taught in German. It is designed to enhance students' German listening, speaking, reading, and writing skills through a variety of activities. It also aims at developing students' cross-cultural awareness and communicative competence in the specialized field of German for Business and Economics in an increasingly global workplace. The course will explore German demography and economic geography; the European Union, the Euro, and Germany's role in this union; German economic systems, industries, banking systems, advertising and sales, transportation and tourism; Germany's corporate culture, industrial relations, codetermination in German companies, etc. Prereq: GRMN 202 or equivalent.

GRMN 320. Topics in Narrative. 3 Units.
This course examines representative prose works (tales, novellas, short novels, letters, and essays) chosen to present reactions and impressions to social and aesthetic conditions in German-speaking countries and to introduce students to different styles and varieties of German prose. Prereq: One 300-level GRMN course.

GRMN 326. Witches, Weddings, and Wolves. 3 Units.
Intensive study of German Folk Tales as collected and altered by the Brothers Grimm. The Maerchen as both children's and adult literature. Prereq: One 300-level GRMN course.

GRMN 330. Topics in German Cinema. 3 Units.
Overview of German Cinema from the beginning to the present. Film selection representative of major directors, major periods (such as expressionism or The New German Cinema), particular themes from different historical perspectives, and literature in film. All films are in German. Taught in German. Prereq: One 300-level GRMN course.

GRMN 340. Topics in German Drama. 3 Units.
Overview of German drama from the beginning to the present. Explores German plays by applying different disciplinary approaches such as historical, cultural, and literary analyses. All plays are in German. Taught in German. Prereq: One 300-level GRMN course.

GRMN 350. Topics in German Lyric. 3 Units.
This course presents a detailed study of German lyric through the frequent writing of critical papers and literary analysis of the formal elements of poetry: rhyme schemes, diction, meter, figures of speech. The poems selected cover a variety of styles, a range of historical periods, and a sampling of authors. Readings and discussions in German. Prereq: One 300-level GRMN course.

GRMN 360. Topics in Major German Authors. 3 Units.
Concentrates on a specific author or small group of authors within an aesthetic or historical context, for example: Goethe, Heine, Bachmann, Junges Deutschland, or die Gruppe 47. Examines the breadth of themes and styles and may include literary, philosophical, biographical, and other kinds of texts. Readings and discussions in German. Prereq: One 300-level GRMN course.

GRMN 365. German Literature in Translation. 3 Units.
Goethe defined "World Literature" (Weltliteratur) as "Intellectual Trade Relations" (geistiger Handelsverkehr). This course gives students the opportunity to study German literary works in translation and thus to trade intellectual relations with a literary culture previously unknown to them. Counts toward the German major only as a related course. No knowledge of German required. Offered as GRMN 365 and WLT 365.

GRMN 367. German Classicism/Romanticism. 3 Units.
Selected works of Goethe, Schiller, Hoelderlin, von Kleist, and others. Prereq: One 300-level GRMN course.

GRMN 370. Topics in Literary Periods. 3 Units.
Overview of German literary periods from the beginning to the present. Explores German literary works in all three major genres from the historical, social, and literary perspectives. All works are in German. Taught in German. Prereq: One 300-level GRMN course.

GRMN 380. Topics in Advanced German Culture Studies. 3 Units.
Exploration of the culture of the arts, political culture, and the cultural self-expression of the German-speaking countries from their beginnings to the present. Focus: The cultural changes within certain historical periods. Examination of particular aspects such as culture as mass deception in fascist Germany and the GDR, the reflection of contemporary culture in literature and cinema, problems of cultural identity and multiculturalism, and the role of postmodern culture industry and the critical discourse today. Taught in German. Prereq: One 300-level GRMN course.

GRMN 395. Special Topics in German Literature. 3 Units.
An advanced seminar on German literature with a specific focus that transcends author, period or genre, probably but not limited to theme or motif, such as "Faust and Monsters." Prereq: One 300-level GRMN course.
GRMN 396. Senior Capstone - German. 3 Units.
The Senior Capstone in German is an independent study project chosen in consultation with a capstone advisor. The capstone project should reflect both the student's interest within German and/or German studies and the courses he or she has taken to fulfill the major. The project requires independent research using and approved bibliography and plan of action. In addition to written research, the student will also present the capstone project in a public forum that agreed upon by the project advisor and the students. Counts as SAGES Senior Capstone. Prereq: Senior status required. Major in German required.

GRMN 397. Honors Thesis I. 3 Units.
Intensive study of a literary, linguistic, or cultural topic with a faculty member, leading to the writing of a research paper in German. Limited to senior majors. Permit required. Prereq: One 300-level GRMN course.

GRMN 398. Honors Thesis II. 3 Units.
Continuation of GRMN 397. Limited to senior majors. Permit required. Prereq: GRMN 397.

GRMN 399. Independent Study in German. 1 - 3 Unit.
For majors and advanced students under special circumstances. Permit required.

HBRW Courses

HBRW 101. Elementary Modern Hebrew I. 4 Units.
The course objective is to enable students to develop basic communicative skills in standard Modern Hebrew. Students will become acquainted with the Hebrew alphabet and vowels, and with basic grammar and vocabulary.

HBRW 102. Elementary Modern Hebrew II. 4 Units.
The course objective is to continue to develop the students' basic communicative skills in standard Modern Hebrew. Students will be introduced to more complex grammatical constructs, linguistic forms and vocabulary. Prereq: HBRW 101 or consent of department.

HBRW 201. Intermediate Modern Hebrew I. 4 Units.
The course objective is to advance the students' Hebrew communicative skills by studying the language in its cultural context. The focus will be on speaking, reading, and writing, with an emphasis on the use of the language as reflected in Israeli culture. Prereq: HBRW 101 or consent of department.

HBRW 202. Intermediate Modern Hebrew II. 4 Units.
The course objectives are to enhance and strengthen the students' Hebrew language skills, and to develop the ability to express thoughts, ideas and opinions freely, in both verbal and written forms. Prereq: HBRW 201 or consent of department.

HBRW 203. Advanced Modern Hebrew I. 3 Units.
The course objectives are to enhance the students' language skills and to develop their ability to use an advanced level of Hebrew effectively. Classes will be conducted in Hebrew, and will focus on speaking, reading, and writing with an emphasis on active and creative use of the language. Prereq: HBRW 202 or consent of department.

HBRW 204. Advanced Modern Hebrew II. 3 Units.
The course objectives are to enhance the students' language skills within the domain of Modern Hebrew literature, and to enable them to use their Hebrew skills to perform detailed literary analyses in Hebrew. Classes will be conducted in Hebrew. Prereq: HBRW 301 or consent of department.

HBRW 301. Advanced Modern Hebrew I. 3 Units.
The course objectives are to enhance the students' language skills within the domain of Modern Hebrew literature, and to enable them to use their Hebrew skills to perform detailed literary analyses in Hebrew. Classes will be conducted in Hebrew. Prereq: HBRW 301 or consent of department.

HBRW 302. Advanced Modern Hebrew II. 3 Units.
The course objectives are to enhance the students' language skills within the domain of Modern Hebrew literature, and to enable them to use their Hebrew skills to perform detailed literary analyses in Hebrew. Classes will be conducted in Hebrew. Prereq: HBRW 301 or consent of department.

HBRW 399. Independent Studies. 1 - 3 Unit.
The course is for students with special interests and commitments that are not fully addressed in regular courses, and who wish to work independently. Prereq: HBRW 301 or consent of department.

ITAL Courses

ITAL 101. Elementary Italian I. 4 Units.
Introductory course; stress on mastery of the sound system and basic sentence structure of spoken and written Italian. Independent laboratory practice is a requirement.

ITAL 102. Elementary Italian II. 4 Units.
Continuation of ITAL 101; independent laboratory practice is required in addition to scheduled class meetings. Prereq: ITAL 101.

ITAL 201. Review and Progress in Italian. 4 Units.
Emphasizes language and culture. Review of Italian grammar and usage while studying written forms. Independent laboratory practice is required in addition to scheduled class meetings. Prereq: ITAL 102 or equivalent.

ITAL 202. Read and Discuss Italian Texts. 4 Units.
Focus on increasing proficiency acquired in elementary Italian and on mastering short narratives. Review of Italian grammar and usage through reading, conversation, and media. Independent laboratory practice is required in addition to scheduled class meetings. Prereq: ITAL 201 or equivalent.

ITAL 308. The Italian Experience. 3 Units.
A three-week summer study abroad course spent at a university in an Italian city well-known for its cultural and linguistic heritage and at other important sites during travel. Focus: Language immersion and processing of cultural experience. Main features: 1. Intense collaboration with an Italian university. Students interact with Italian peers; seminars are co-taught by Italian faculty. 2. Creation of an individual journal that synthesizes students' perception of and reflections on their experience, records the progress of their final project, and documents their improvement in language proficiency. 3. Final project. Students meet M-F in a formal setting for advanced language study designed to improve proficiency in speaking, comprehension, reading, and writing. They attend seminars on varied topics in literature, history, and civilization. Visits to museums, galleries, and attendance at cultural events are included. Prereq: ITAL 202 or equivalent.

ITAL 311. Conversation in Italian. 3 Units.
Focused on oral communication, ITAL 311 is designed to enhance listening/comprehension skills in Italian. Using audio-visual materials, students acquire the skills necessary to understand conversations between native-speakers and to emulate them. The situational and functional approach to the course facilitates progress towards advanced-level fluency in Italian. Prereq: ITAL 202 or equivalent.

ITAL 370. Special Topics in Italian Literature. 3 Units.
Special topics in Italian literature, literary criticism, and culture. Prereq: ITAL 202 or equivalent.

ITAL 399. Independent Study. 1 - 3 Unit.
The course is for students with special interests and commitments that are not fully addressed in regular courses, and who wish to work independently.
JAPN Courses

JAPN 101. Elementary Japanese I. 4 Units.
Introduction to understanding, speaking, reading, and writing Japanese. Students learn to read and write hiragana and katakana syllabaries and approximately 50 kanji characters. Students are expected to achieve control of the sound system and basic structure of the language. Emphasizes aural comprehension and speaking.

JAPN 102. Intermediate Japanese I. 4 Units.

JAPN 201. Intermediate Japanese II. 4 Units.
Further study of fundamental structures of Japanese. Students improve aural comprehension, speaking, reading, and writing abilities and learn approximately 100 new characters. Recommended preparation: JAPN 201 or equivalent.

JAPN 202. Intermediate Japanese II. 4 Units.
Continuation of JAPN 201. Students learn an additional 100 kanji characters. With the completion of JAPN 201 - 202, students should have control of the fundamentals of modern Japanese and a firm foundation in the writing system. Recommended preparation: JAPN 201 or equivalent.

JAPN 225. Japanese Popular Culture. 3 Units.
This course highlights salient aspects of modern Japanese popular culture as expressed in animation, comics and literature. The works examined include films by Hayao Miyazaki, writings by Kenji Miyazawa, Haruki Murakami and Banana Yoshimoto, among others. The course introduces students to essential aspects of modern Japanese popular culture and sensibility. Offered as JAPN 225 and WLIT 225.

JAPN 245. Classical Japanese Literature in Translation. 3 Units.
Readings, in English translation, of classical Japanese poetry, essays, narratives, and drama to illustrate essential aspects of Japanese culture and sensibility before the Meiji Restoration (1868). Lectures explore the sociohistorical contexts and the character of major literary genres; discussions focus on interpreting the central images of human value within each period. Japanese sensibilities compared to and contrasted with those of Western and other cultures. Offered as JAPN 245 and WLIT 245.

JAPN 255. Modern Japanese Literature in Translation. 3 Units.
Focus on the major genres of modern Japanese literature, including poetry, short story, and novel (shosetsu). No knowledge of Japanese language or history is assumed. Lectures, readings, and discussions are in English. Films and slides complement course readings. Offered as JAPN 255 and WLIT 255.

JAPN 301. Advanced Japanese I. 4 Units.
Emphasizes conversational proficiency and reading. Students must use the course material offered by the Online Language Learning Center in addition to class meetings. Recommended preparation: JAPN 202 or equivalent.

JAPN 302. Advanced Japanese II. 4 Units.
Continuation of JAPN 301; emphasizes conversational proficiency and reading. Japanese life and culture introduced through supplemental materials and activities. Students must use the course material offered by the Online Language Learning Center in addition to class meetings. Recommended preparation: JAPN 301 or equivalent.

JAPN 345. Japanese Women Writers. 3 Units.
Contributions of women writers to the literature of pre-modern and modern Japan; investigations of how their works exemplify and diverge from "mainstream" literary practices. Emphasis on the social and cultural contexts of the texts. Offered as JAPN 345 and WLIT 345.

JAPN 350. Contemporary Japanese Texts I. 3 Units.
The primary aim of this course is to develop communication skills in Japanese based on those that the students have acquired in JAPN 302 or equivalent. The students will read and discuss various texts such as daily conversations, essays, and news scripts with the assistance of vocabulary and kanji (Chinese character) lists and formal grammar explanations. Attention also will be given to enhancing the students' writing and aural/oral proficiencies through regularly assigned homework, presentations, tape listening, video viewing, and classroom discussion. Recommended preparation: JAPN 302 or equivalent.

JAPN 351. Contemporary Japanese Texts II. 3 Units.
This course is a continuation of JAPN 350 and its primary aim overlaps with that of JAPN 350: to develop more sophisticated communication skills in Japanese. Students will read and discuss various texts such as daily conversations, essays, and news scripts largely with the assistance of vocabulary and kanji (Chinese character) lists. Attention will be given to enhancing the students' writing and aural/oral proficiencies through regularly assigned homework, presentations, tape listening, video viewing, and classrooms discussion. Prereq: JAPN 350 or consent of instructor.

JAPN 355. Modern Japanese Novels and the West. 3 Units.
This course will compare modern Japanese and Western novels, drama, and novels. Comparisons will focus on the themes of family, gender and alienation, which subsume a number of interrelated sub-themes such as marriage, home, human sexuality, aramei (dependence), innocence, experience, death, God/gods, and nature (the ecosystem). Offered as JAPN 355, WLIT 355. Counts as SAGES Departmental Seminar.

JAPN 396. Senior Capstone - Japanese. 3 Units.
The Senior Capstone in Japanese is an independent study project chosen in consultation with a capstone advisor. The capstone project should reflect both the student's interest within Japanese and the courses he or she has taken to fulfill the major. The project requires independent research using an approved bibliography and plan of action. In addition to written research, the student will also present the capstone project in a public forum that is agreed upon by the project advisor and the student. Counts as SAGES Senior Capstone. Prereq: Senior status required. Major in Japanese required.

JAPN 397. Senior Thesis I. 3 Units.
Intensive study of a literary, linguistic, or cultural topic with a faculty member, leading to the writing of a research paper in English or Japanese. Limited to senior majors. Permit required.

JAPN 398. Senior Thesis II. 3 Units.
Continuation of JAPN 397. Limited to senior majors. Prereq: JAPN 397.

JAPN 399. Independent Study. 1 - 3 Unit.
Directed study for students who have progressed beyond available course offerings.
JAPN 450. Japanese in Cultural Context I. 3 Units.
The primary aim of this graduate course is to develop sophisticated
communication skills (listening, speaking, reading, and writing) in
Japanese. The students will read and discuss various texts in the original,
such as essays, news scripts, and literary works. Classroom instruction
and discussion will be conducted in Japanese. The students also will be
required to write a research paper of 4000-6000 letters/characters (10-15
genkoyoshi pages) in Japanese on a topic related to Japan and the
student's specialty. Recommended preparation: JAPN 351 or equivalent.

JAPN 451. Japanese in Cultural Context II. 3 Units.
This course is a continuation of JAPN 450 and it aims at a further
development of sophisticated communication skills (listening, speaking,
reading, and writing) in Japanese. The students will read and discuss
various texts in the original, such as essays, news scripts, and literary
works both classical and modern. Classroom instruction and discussion
will be conducted in Japanese. The students also will be required to write
a research paper of 6000-8000 letters/characters (15-20 genkoyoshi
pages) in Japanese on a topic related to Japan and the student's
specialty. Recommended preparation: JAPN 450 or equivalent.

LING Courses

LING 301. Second Language Acquisition I. 3 Units.
This course is an introduction to the growing field of second language
acquisition (SLA). SLA seeks to understand the linguistic, psychological
and social processes that underlie the learning and use of second
language(s). The goal of research is to identify the principles and
processes that govern second language learning and use. SLA is
approached from three perspectives in the course: 1) as linguistic
knowledge; 2) as a cognitive skill; and 3) as a socially and personality-
mediated process. Important factors in second language learning will
be identified and discussed. These include: age-related differences,
the influence of the first language, the role played by innate (universal)
principles, the role of memory processes, attitudes, motivation,
personality and cognitive styles, and formal versus naturalistic learning
contexts. The objective of this course is to survey the principal research
in second language acquisition. Students will become familiar with
the major research issues through their reading of both primary and
secondary sources, as well as through lectures and class discussions.
Offered as COGS 312, COGS 412, LING 301 and LING 401.

LING 401. Second Language Acquisition I. 3 Units.
This course is an introduction to the growing field of second language
acquisition (SLA). SLA seeks to understand the linguistic, psychological
and social processes that underlie the learning and use of second
language(s). The goal of research is to identify the principles and
processes that govern second language learning and use. SLA is
approached from three perspectives in the course: 1) as linguistic
knowledge; 2) as a cognitive skill; and 3) as a socially and personality-
mediated process. Important factors in second language learning will
be identified and discussed. These include: age-related differences,
the influence of the first language, the role played by innate (universal)
principles, the role of memory processes, attitudes, motivation,
personality and cognitive styles, and formal versus naturalistic learning
contexts. The objective of this course is to survey the principal research
in second language acquisition. Students will become familiar with
the major research issues through their reading of both primary and
secondary sources, as well as through lectures and class discussions.
Offered as COGS 312, COGS 412, LING 301 and LING 401.

MLIT Courses

MLIT 315. Mysticism and Literature. 3 Units.
This co-taught seminar will explore and compare mystical elements
in selected literary and theoretical works from the West and the East.
Comparisons will focus on a number of interrelated sub-themes
such as mind, language, alienation, innocence, experience, life,
death, cosmogony, cosmology, good, evil, God/gods, and nature (the
ecosystem). Offered as MLIT 315, WLIT 315, MLIT 415 and WLIT 415.

MLIT 327. Gesture in Cognition and Communication. 3 Units.
Most people never notice that when they are talking, they're also
gesturing. Why do we produce these gestures? What can studying them
tell us about the human mind? This course surveys scientific research on
gesture, exploring topics such as the role of gesture in communication,
cross-cultural differences in gesture, and the relationship between
gesture and signed languages. The course will focus on gestures
produced with speech, but will cover symbolic and ritualized gesture in
the visual arts and in dance. Offered as COGS 327 and COGS 427 and
MLIT 327. Counts as SAGES Departmental Seminar.

MLIT 328. Seminar in Intercultural Communication: A Multilingual
Media Approach. 3 Units.
This seminar will study communication, especially news communication,
through current media in different languages and cultures. It will compare
discourse, terminology, vocabulary, and general rhetorical features of
the genres of media-borne languages taught in the department. It
will enhance the student's general knowledge of contemporary use of
discourse in the foreign language.

MLIT 415. Mysticism and Literature. 3 Units.
This co-taught seminar will explore and compare mystical elements
in selected literary and theoretical works from the West and the East.
Comparisons will focus on a number of interrelated sub-themes
such as mind, language, alienation, innocence, experience, life,
death, cosmogony, cosmology, good, evil, God/gods, and nature (the
ecosystem). Offered as MLIT 315, WLIT 315, MLIT 415 and WLIT 415.

PORT Courses

PORT 101. Elementary Portuguese I. 4 Units.
Introductory course. Students achieve control of the sound system and
basic sentence structures of spoken and written Portuguese. Students
use materials offered through the Language Center in addition to class
meetings.

PORT 102. Elementary Portuguese II. 4 Units.
Continuation of PORT 101, emphasizing conversational skills. Prereq:
PORT 101 or equivalent.

PORT 201. Intermediate Portuguese I. 4 Units.
PORT 201 is an intermediate language course. It assumes a fair
knowledge of basic grammar that is reviewed and expanded. The
course needs the student to show a strong determination to engage in
conversation in Portuguese, and to commit to develop better writing in
Portuguese. The student learns more about cultural aspects in
the Portuguese-speaking world. The course is taught completely in
Portuguese. Prereq: PORT 102 or equivalent.

PORT 399. Independent Study. 1 - 3 Unit.
This course is for students with special interests and commitments
that are not addressed in regular courses and who wish to work
independently.
**RUSN Courses**

**RUSN 101. Elementary Russian I. 4 Units.**
Introductory course emphasizing conversational skills. Students achieve control of alphabet, sound system, and basic sentence structures in spoken and written Russian. Students must use the course material offered by the Online Language Learning Center in addition to class meetings.

**RUSN 102. Elementary Russian II. 4 Units.**

**RUSN 201. Intermediate Russian. 4 Units.**
Furthers students' ability in four basic language skills: understanding, speaking, reading and writing; expands knowledge of Russian grammar and vocabulary. Recommended preparation: RUSN 102.

**RUSN 202. Introduction to Contemporary Civilization. 4 Units.**
Continuation of RUSN 201; introduces contemporary Russian culture through readings and discussion. Recommended preparation: RUSN 201.

**RUSN 210. Russian for Russian heritage speakers who had no exposure to formal education in Russian. 3 Units.**
The course is aimed at “heritage speakers” of Russian who grew up speaking Russian in the family without a full Russian educational and cultural background. The course is designed for students who have speaking and comprehension abilities in Russian but have minimum exposure to writing and reading. Students will learn about Russian grammar (spelling rules, punctuation, word-formation, parts of speech). Readings include the works of Russian classical and contemporary authors. Multimedia materials will enhance cultural awareness.

**RUSN 311. Advanced Conversation. 3 Units.**
Students work to improve fluency in spoken Russian. Topics of conversation include aspects of contemporary civilization; current vocabulary is stressed. Recommended preparation: RUSN 202.

**RUSN 319. Life in Modern Russia. 3 Units.**
Examines aspects of life in modern Russia, between the 1917 Revolution and the present, including political and social systems and cultural life through the study of texts, films and other media. Recommended preparation: RUSN 202.

**RUSN 320. Introduction to Russian Literature. 3 Units.**
Introduction to major literary movements, principal writers, and outstanding works of Russian literary works. Recommended preparation: RUSN 202 or equivalent.

**RUSN 370. Special Topics in Russian. 3 Units.**
This course is designed to address the students’ and faculty interests in specific themes or issues not otherwise covered in the curriculum. Approaches and content will vary. This course may have a focus that crosses generic, artistic, historical, disciplinary and geographical boundaries. The honing of the analytical and interpretive skills as well as development of Russian language skills are also integral objectives of the course. The class is conducted in Russian. All written assignments are in Russian. Recommended Preparation: Two years of Russian.

**RUSN 375. Russian Literature in Translation. 3 Units.**
Topics vary according to student and faculty interest. May include Russian classical and modern literature, cinema, women writers, individual authors. May count towards Russian minor. No knowledge of Russian required. Offered as RUSN 375 and WLIT 375.

**RUSN 399. Independent Study. 1 - 3 Unit.**

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**SPAN Courses**

**SPAN 101. Elementary Spanish I. 4 Units.**
Introductory course. Students achieve control of the sound system and basic sentence structures of spoken and written Spanish. Students must use the course material offered by the Online Language Learning Center in addition to class meetings.

**SPAN 102. Elementary Spanish II. 4 Units.**
Continuation of SPAN 101, emphasizing conversational skills. Recommended preparation: SPAN 101.

**SPAN 201. Intermediate Spanish I. 4 Units.**
Intensive review of grammar and usage through readings, discussions, and other activities. Recommended preparation: SPAN 102 or equivalent.

**SPAN 202. Intermediate Spanish II. 4 Units.**
Continues grammar review of SPAN 201. Students will study texts and cultural documents which focus on contemporary life in Hispanic countries. Recommended preparation: SPAN 201 or equivalent.

**SPAN 285. The Hispanophone World. 3 Units.**
A survey of the imaginative literatures in a variety of genres from the Spanish-speaking world, including texts authored by Hispanics living in the United States. The selections will help students gain a greater understanding and appreciation of the impact and adaptation of Spanish language and culture among widely diverse populations of the world over the past centuries. Counts towards Spanish major as related course. No knowledge of Spanish required. Offered as SPAN 285 and WLIT 285.

**SPAN 303. Latin American History through Art, Literature and Cinema. 3 Units.**
This course is designed to provide a basic understanding of Latin America and the Caribbean through art, film and literature. Although it will address pertinent historical aspects related to its social, political, cultural and economic development, the course will focus on relevant contemporary issues affecting and transforming the region, such as the role of women, dictatorships vs. democracy, revolutionary movements, endemic poverty, the Indian communities, the role of art and culture, migration to urban centers, the drug war, the role of the Catholic Church and liberation theology, and the presence and intervention of the United State in the region. The course will be taught in English.

**SPAN 305. Spanish for Political Science and International Relations. 3 Units.**
Spanish 305 is an upper-level Spanish language course designed to give students interested in political science and international relations specific field-related vocabulary and cultural information not found in basic textbooks. The course is divided into two parts: the first deals with political science; the second with international relations. Readings, discussions, and lectures are conducted in Spanish. Prerequisite: SPAN 202 or requisites not met permission.
SPAN 306. The Cuban Experience: an immersion in its culture and society. 3 Units.
This is a three week study-abroad intensive course that takes place at Editorial Vigía, in Matanzas, Cuba. The course combines the unique advantages of a total immersion environment in Spanish with a classroom curriculum that includes conversation practice and study of relevant cultural, literary and historical issues. Students complete three hours of classroom instruction and an hour and a half of publishing workshop four days per week. In this workshop, they work in the edition of a bilingual book. In addition, they participate in organized visits to historic sites and museums connected to the culture curriculum. The focus of the culture curriculum is the study of Cuban history and culture through its literature, visual arts, films, and music. After applying and being accepted in the program, students meet for personal advising with the program director and attend four different one-hour orientation-information meetings in the spring semester. After successful completion of the study-abroad program, students receive 3 upper-level credits in Spanish. The course is interdisciplinary in approach and provides students with the tools they need to analyze and understand the complexities of modern Cuba. Students will have formal classes taught by their professor and talks and meetings with specialists on Cuban literature, art, architecture, history and other aspects of culture and society. In addition, they will attend lectures, participate in discussions, and take field trips that will expose them to many aspects of Cuban culture, such as art, architecture, music, dance, film, literature, artisan work, folklore, history and urban growth. Offered as SPAN 306, SPAN 406, and ETHS 306. Prereq: SPAN 202.

SPAN 307. Spanish Phonetics and Phonology. 3 Units.
Spanish Phonetics and Phonology is designed to introduce students to the study and practice of the sound system of Spanish. The course will focus on the articulatory descriptions of native pronunciations, the differences between letters and sounds, and the classification of sounds. The course will focus mainly on the sounds of Spanish but will also include the differences with English Language sounds. It will also develop awareness of the different dialectal variations of Spanish across the world. In addition, cultural competency will be achieved through a contextualized approach. The main goal of this course is to improve pronunciation and intonation in Spanish with special emphasis in the production of native-like sounds. Prereq: SPAN 202.

SPAN 308. Advanced Spanish in Spain. 3 Units.
Three week study-abroad intensive course that takes place in Valladolid, Spain. The course combines the unique advantages of a total immersion environment in Spanish with a classroom curriculum that includes grammar review, conversation practice, and study of relevant cultural issues. The focus of the culture curriculum is the study of Spain's key historical moments through the city of Valladolid and nearby communities: their literature, visual arts, films, and music. The cultural component is enhanced by visits to historic and cultural sites and museums. Four different one-hour orientation meetings during Spring semester. Prereq: SPAN 202 or equivalent.

SPAN 309. The Buenos Aires Experience. 3 Units.
Three week study-abroad intensive course that takes place in Buenos Aires, Argentina. The course combines the unique advantages of a total immersion environment in Spanish with a classroom curriculum that includes grammar review, conversation practice, and study of relevant cultural issues. The focus of the culture curriculum is the study of the city of Buenos Aires' history and culture through its literature, visual arts, films, and music. The cultural component is enhanced by visits to historic and cultural sites and museums. Four different one-hour orientation meetings during Spring semester. Prereq: SPAN 202 or equivalent.

SPAN 310. Advanced Composition and Reading. 3 Units.
Designed to facilitate the transition between lower and upper division courses in Spanish, and focus upon the simultaneous development of the reading and writing skills expected of students in all advanced Spanish courses. Prereq: SPAN 202.

SPAN 311. Advanced Spanish Conversation. 3 Units.
Engages students in conversation so that they develop oral proficiency. Short essays and newspaper articles dealing with everyday activities, socio-cultural roles and experiences, and self-awareness and life goals discussed; some literary materials discussed. Prereq: SPAN 202.

SPAN 312. Business Spanish. 3 Units.
Spanish for business is an upper-level language and culture course which is designed for students at the advance intermediate level. The course stresses the vocabulary and expressions used to describe economic and commercial structure, the language to solve problems and conduct negotiations, and the culture of specific aspects of the Spanish world of the business. Students will continue being exposed to listening, speaking, reading and writing through a variety of activities. Prereq: SPAN 202 or permission.

SPAN 313. Spanish for Health Professionals. 3 Units.
Designed for students who are majoring in, or considering a major in, a health-related field. Focus on the vocabulary and expressions needed for the workplace, task-based practical skills, and grammatical structures. Prereq: SPAN 202 or equivalent.

SPAN 314. Practice of Translation. 3 Units.
Students learn necessary skills and techniques for solving linguistic problems in translation. Texts with a variety of contents, including articles from current press, will be translated from English into Spanish and occasionally from Spanish into English. Prereq: SPAN 202.

SPAN 315. Latin American Cultural Conflicts. 3 Units.
Evolution of Latin American socioeconomic characteristics and artistic production up to the present. Class discussions of diverse literary works, social research essays, and testimonials focus on conflicting elements in class structures, ethnicity, and urban modernization as well as family ethos, religious trends, cultural identity, and educational problems. Prereq: SPAN 202.

SPAN 316. Studies in Civilization. 3 Units.
Major historical, intellectual, and artistic influences that have shaped the evolution of Spanish civilization. Prereq: SPAN 202.

SPAN 317. Contemporary Latin American Culture. 3 Units.
An intensive study of Latin American culture and civilization through the examination of its arts: literature, music, film, painting, photography, popular art. Designed to bring together the various strands of Latin American realities, emphasis is placed on the predominant view among Latin American intellectuals that artists and intellectuals have the power and the obligation to modify society. Prereq: SPAN 202.

SPAN 318. Contemporary Spanish Culture. 3 Units.
Study of several key historical moments and several key aspects in contemporary Spain: Spanish civil war, Franco's dictatorship, and democratic Spain; rural-urban differences, industrialization and migratory movements; nationalism and terrorism; foreign immigration and tourism, the cultural renaissance and the cultural wars in Madrid and Barcelona. Feature films and literary texts will illustrate the issues under study. Prereq: SPAN 202.
SPAN 319. Spanish for Legal Professionals. 3 Units.
Spanish for Legal Professionals is designed to familiarize students with technical language, legal topics and documents used in legal professions. The course will focus in the American common law system but will also include comparison with the civil law tradition as applied in Latin America. It will also develop oral and written communication skills in order to improve the communication with Spanish speaking clients and the Hispanic community as required. In addition, cultural competency will be achieved through a contextualized approach. This course reviews the grammar studied in previous courses and promotes class discussions and includes readings as well as translation of legal documents. Prereq: SPAN 202 or equivalent.

SPAN 320. Introduction to Readings in Hispanic Literature. 3 Units.
Introduction to major literary movements and genres, and the works of outstanding authors of Spanish and Latin American literature through close readings and seminar-based discussions of the texts, as well as to disciplinary modes of inquiry and presentation. Requirements include active participation in seminar discussions, oral presentations, tests, and several written assignments, such as response papers, in-class writing exercises, and an analytic essay in Spanish on a research topic of interest to the discipline. Counts as SAGES Departmental Seminar. Prereq: SPAN 202.

SPAN 322. Latin American Short Story. 3 Units.
The history and development of the Latin American short story from the nineteenth century to the present. Intertextuality, rise of the Nuevo Cuento, and major characteristics of the works. Prereq: SPAN 320.

SPAN 325. Hispanic Intellectuals and Society: A Critical Approach. 3 Units.
This course offers an overview of the most important critical approaches to Spanish American culture and literature, with a socio-historical emphasis. Some of the authors we will discuss are Angel Rama, Jose Antonio Cornejo Polar and Nestor Garcia Canclini. We will analyze how the Latin American intellectuals had thought about specific issues such as identity, race, ideology, colonial and post-colonial relations with the metropolis and the process of formation of the nations in the continent. The class, the discussions, exams, oral presentations and papers will be in Spanish. Some of the readings must be in English, but most of them will be in Spanish. Offered as SPAN 325, SPAN 425, ETHS 325, WLIT 325 and WLIT 425. Prereq: SPAN 320.

SPAN 326. The Fantastic in Latin American Prose. 3 Units.
Introduction to a distinctive trend in contemporary Latin American literature, the prose portrayal of the "fantastic," a new narrative mode in Latin America. Critical examination of selected texts reveals new concepts of space and time and an increasing complexity of structure and style, one which juxtaposes and analyzes fantasy and reality. Offered as SPAN 326 and SPAN 426. Prereq: SPAN 320.

SPAN 330. Hispanic Golden Age Literature. 3 Units.
Through close reading and discussion of representative texts, we will study different examples of Spanish and Latin American writing from the Middle Ages, Renaissance and Baroque periods. We will stress connections between Spain and Latin America, as well as cultural and literary topics of special relevance for contemporary Hispanic cultures. Prereq: SPAN 320.

SPAN 331. Spanish Golden Age Literature. 3 Units.
In addition to developing a general awareness of the literature and history of this region, students will acquire an awareness of the interrelation of national identity, memory, and language in the texts produced by contemporary Caribbean authors, and of the cultural hybridity characteristic of this production. The themes treated by these authors include colonialism and postcolonialism, cultural and religious syncretism, and sexual politics. Offered as SPAN 333, SPAN 433, ETHS 333, WLIT 333 and WLIT 433. Prereq: SPAN 320.

SPAN 332. Mexican Literature. 3 Units.
The course studies, through a series of representative literary works, the most significant literary movements and styles in 20th and 21st Century Mexican Literature. Special attention will be paid to the political, aesthetic, and philosophical debates that have shaped the development of Mexican literature from the 1920s to the present, and to the different narrative techniques and ideologies that have characterized different historical periods, literary movements, and individual authors' styles in contemporary Mexican literature. Offered as SPAN 334 and SPAN 434. Prereq: SPAN 320.

SPAN 333. Contemporary Caribbean Literature. 3 Units.
Introduction to most important poets in contemporary Latin America, a region home to a significant number of eminent poets, including Nobel Laureates from Chile, Gabriela Mistral and Pablo Neruda. The course focuses on detailed textual analysis of pivotal works, combined with historical-literary perspective, so students gain insight into the diverse styles and tendencies that reflect the tumultuous history of poetry's development in a relentless search for a Latin American cultural identity. Offered as SPAN 339, SPAN 439, WLIT 339 and WLIT 439. Prereq: SPAN 320.

SPAN 334. Mexican Literature. 3 Units.
Students explore the most significant narrative techniques since 1945 in Latin American fiction: Borges, Cortazar, Garcia Marquez, Vargas Llosa, Isabel Allende. Prereq: SPAN 320.

SPAN 335. Contemporary Latin-American Narrative. 3 Units.
Examination of the awakening of feminine and feminist consciousness in the literary production of Latin American women writers, particularly from the 1920s to the present. Close attention paid to the dominant themes of love and dependency; imagination as evasion; alienation and rebellion; sexuality and power; the search for identity and the self-preservation of subjectivity. Readings include prose, poetry, and dramatic texts of female Latin American writers contributing to the emerging of feminist ideologies and the mapping of feminist identities. Offered as SPAN 342, SPAN 442, ETHS 342, WGST 342, WLIT 342, and WLIT 442. Prereq: SPAN 320.

SPAN 336. The New Drama in Latin American. 3 Units.
Representative works of contemporary Latin American drama. Critical examination of selected dramatic works of twentieth-century Latin America provides students insight into the nature of drama and into the structural and stylistic strategies utilized by Latin American dramatists to create the "new theater," one which is closely related to Latin American political history. Offered as SPAN 343, SPAN 434, ETHS 343, WLIT 343 and WLIT 434. Prereq: SPAN 320.

SPAN 337. Hispanic Autobiographical Writing. 3 Units.
Study of the literature of first-person autobiography, with an emphasis on the most outstanding authors of Spanish and Latin American literature through close readings and seminar-based discussions of the texts, as well as to disciplinary modes of inquiry and presentation. Requirements include active participation in seminar discussions, oral presentations, tests, and several written assignments, such as response papers, in-class writing exercises, and an analytic essay in Spanish on a research topic of interest to the discipline. Counts as SAGES Departmental Seminar. Prereq: SPAN 202.

SPAN 338. Hispanic intellectuals and Society: A Critical Approach. 3 Units.
This course offers an overview of the most important critical approaches to Spanish American culture and literature, with a socio-historical emphasis. Some of the authors we will discuss are Angel Rama, Jose Antonio Cornejo Polar and Nestor Garcia Canclini. We will analyze how the Latin American intellectuals had thought about specific issues such as identity, race, ideology, colonial and post-colonial relations with the metropolis and the process of formation of the nations in the continent. The class, the discussions, exams, oral presentations and papers will be in Spanish. Some of the readings must be in English, but most of them will be in Spanish. Offered as SPAN 325, SPAN 425, ETHS 325, WLIT 325 and WLIT 425. Prereq: SPAN 320.

SPAN 339. Latin American Poetic Revolt. 3 Units.
Prereq: SPAN 320.

SPAN 340. Contemporary Latin-American Narrative. 3 Units.
Students explore the most significant narrative techniques since 1945 in Latin American fiction: Borges, Cortazar, Garcia Marquez, Vargas Llosa, Isabel Allende. Prereq: SPAN 320.

SPAN 341. Latin American Feminist Voices. 3 Units.
Examination of the awakening of feminine and feminist consciousness in the literary production of Latin American women writers, particularly from the 1920s to the present. Close attention paid to the dominant themes of love and dependency; imagination as evasion; alienation and rebellion; sexuality and power; the search for identity and the self-preservation of subjectivity. Readings include prose, poetry, and dramatic texts of female Latin American writers contributing to the emerging of feminist ideologies and the mapping of feminist identities. Offered as SPAN 342, SPAN 442, ETHS 342, WGST 342, WLIT 342, and WLIT 442. Prereq: SPAN 320.

SPAN 342. Latin American Feminist Voices. 3 Units.
Examination of the awakening of feminine and feminist consciousness in the literary production of Latin American women writers, particularly from the 1920s to the present. Close attention paid to the dominant themes of love and dependency; imagination as evasion; alienation and rebellion; sexuality and power; the search for identity and the self-preservation of subjectivity. Readings include prose, poetry, and dramatic texts of female Latin American writers contributing to the emerging of feminist ideologies and the mapping of feminist identities. Offered as SPAN 342, SPAN 442, ETHS 342, WGST 342, WLIT 342, and WLIT 442. Prereq: SPAN 320.

SPAN 343. The New Drama in Latin American. 3 Units.
Representative works of contemporary Latin American drama. Critical examination of selected dramatic works of twentieth-century Latin America provides students insight into the nature of drama and into the structural and stylistic strategies utilized by Latin American dramatists to create the "new theater," one which is closely related to Latin American political history. Offered as SPAN 343, SPAN 434, ETHS 343, WLIT 343 and WLIT 434. Prereq: SPAN 320.

SPAN 345. Hispanic Autobiographical Writing. 3 Units.
The course studies issues of self-representation through the reading of autobiographical works from different periods from Latin America, Spain, and the U.S., and of theoretical works that address topics of first-person narratives, autobiography, and sub-alternity. Satisfies Global and Cultural Diversity requirement. Offered as SPAN 345 and SPAN 445. Prereq: SPAN 320.
SPAN 350. Spanish Fiction. 3 Units.
Narrative masterpieces from Cervantes and the picaresque (El Lazarillo) to the short stories and novels of 19th and 20th century authors. Prereq: SPAN 320.

SPAN 351. Hispanic Turn of the Century Literature. 3 Units.
Cultural and political transitions between 19th and 20th Century, between Spain and Latin America, and between literary models. Study of Spanish and Latin American writers and their literary connections (Generation of 1898, modernistas) in the context of colonial conflicts and economic changes. Offered as SPAN 351 and SPAN 451. Prereq: SPAN 320.

SPAN 353. Transatlantic Vanguard. 3 Units.
Presentation of transatlantic tendencies of the early production of writers and artists of African descent in Latin America and the Caribbean, paying attention to both their creative and theoretical texts. Discussion of questions of race and ethnicity will allow students to explore the ways in which these texts reformulate the idea of national identity and cultural belonging in the context of the nation-state, whose traditional centrality is being weakened through the effects of migration and exile. Readings include works by writers from Cuba, Puerto Rico, Dominican Republic, Costa Rica, Colombia, Panama, Ecuador, and Peru. Offered as SPAN 353 and SPAN 453. Prereq: SPAN 320.

SPAN 356. Afro-Hispanic Literature. 3 Units.
This course will survey the literary and cultural production of writers and artists of African descent in Latin America and the Caribbean, paying attention to both their creative and theoretical texts. Discussion of questions of race and ethnicity will allow students to explore the ways in which these texts reformulate the idea of national identity and cultural belonging in the context of the nation-state, whose traditional centrality is being weakened through the effects of migration and exile. Readings include works by writers from Cuba, Puerto Rico, Dominican Republic, Costa Rica, Colombia, Panama, Ecuador, and Peru. Offered as SPAN 356, SPAN 456, ETHS 356, WLIT 356 and WLIT 456. Prereq: SPAN 320.

SPAN 358. Latin American Cinema. 3 Units.
This course is designed to introduce students to the basic tools of film analysis as well as to the major trends and movements in Latin American cinema from the 1960s to the present. Through the analysis of representative films from Latin America, the course will examine the development of a variety of cinematic styles, paying particular attention to the historical contexts in which the films were produced and to the political, cultural, and aesthetic debates that surrounded their production. Offered as SPAN 358, SPAN 458, ETHS 358, WLIT 358 and WLIT 458. Prereq: SPAN 320 or equivalent.

SPAN 370. Special Topics in Spanish. 3 Units.
This course is designed to respond to students' and faculty interest in specific themes or issues not otherwise covered in the curriculum. Approaches, content, and instructor will vary and this course may have a focus that crosses generic, artistic, historical, disciplinary, and geographical boundaries. The honing of analytical and interpretative skills as well as the further development of Spanish language skills also are integral objectives of this course. The class is conducted in Spanish. Prereq: SPAN 320 or equivalent.

SPAN 385. Hispanic Literature in Translation. 3 Units.
Critical analysis and appreciation of representative literary masterpieces from Spain and Latin America, and by Hispanics living in the U.S. Texts cover a variety of genres and a range of literary periods, from works by Cervantes to those of Gabriel Garcia Marquez. The course will examine the relationship between literature and other forms of artistic production, as well as the development of the Hispanic literary text within the context of historical events and cultural production of the period. Counts toward Spanish major only as related course. No knowledge of Spanish required. Offered as ETHS 385, ETHS 485, SPAN 385, SPAN 485, WLIT 385, and WLIT 485.

SPAN 396. Senior Capstone - Spanish. 3 Units.
The Senior Capstone in Spanish in an independent study project chosen in consultation with a capstone advisor. The capstone project should reflect both the student's interest within Spanish and the courses he or she has taken to fulfill the major. The project requires independent research using an approved bibliography and plan of action. In addition to written research, the student will also present the capstone project in a public forum that is agreed upon by the project advisor and the student. Counts as SAGES Senior Capstone. Senior status required. Major in Spanish required.

SPAN 397. Honors Thesis I. 3 Units.
Intensive study of a literary, linguistic, or cultural topic with a faculty member, leading to the writing of a research paper in Spanish. Limited to senior majors.

SPAN 398. Honors Thesis II. 3 Units.
Continuation of SPAN 397. Limited to senior majors. Permit required. Prereq: SPAN 397.

SPAN 399. Independent Study. 1 - 3 Unit.
The course is for students with special interests and commitments that are not fully addressed in regular courses, and who wish to work independently.

SPAN 400. Foreign Language Teaching Methodology Practicum. 3 Units.
This class is a requirement for first year MA students. This class will allow the Graduate students in Hispanic Studies to improve their teaching skills. Students will learn the most recent theories and methodologies regarding the teaching of a foreign language and will have practical experience dealing with pedagogical situations in a classroom while teaching a foreign language. Students will work and study under the supervision of their instructor. The course is designed as a practicum and it will work as an independent study while the student attends different language and culture classes to observe them. The combination of study and practice will allow the students to reflect about the teaching techniques they will learn.

SPAN 401. Introduction to Critical Theory. 3 Units.
This course is an introduction to the field of critical theory. It examines many of the major theoretical approaches to the study of literary and cultural texts such as Marxism, Post-structuralism, Feminism, and Post-colonial studies. It provides students with a critical map of some of the most influential theoretical approaches to the study of culture as well as with the necessary analytical tools for the interpretation of texts. The course is a requirement for first-year MA students in Hispanic Studies.
SPAN 406. The Cuban Experience: an immersion in its culture and society. 3 Units.
This is a three week study-abroad intensive course that takes place at Editorial Vigía, in Matanzas, Cuba. The course combines the unique advantages of a total immersion environment in Spanish with a classroom curriculum that includes conversation practice and study of relevant cultural, literary and historical issues. Students complete three hours of classroom instruction and an hour and a half of publishing workshop four days per week. In this workshop, they work in the edition of a bilingual book. In addition, they participate in organized visits to historic sites and museums connected to the culture curriculum. The focus of the culture curriculum is the study of Cuban history and culture through its literature, visual arts, films, and music. After applying and being accepted in the program, students meet for personal advising with the program director and attend four different one hour orientation-information meetings in the spring semester. After successful completion of the study-abroad program, students receive 3 upper-level credits in Spanish. The course is interdisciplinary in approach and provides students with the tools they need to analyze and understand the complexities of modern Cuba. Students will have formal classes taught by their professor and talks and meetings with specialists on Cuban literature, art, architecture, history and other aspects of culture and society. In addition, they will attend lectures, participate in discussions, and take field trips that will expose them to many aspects of Cuban culture, such as art, architecture, music, dance, film, literature, artisan work, folklore, history and urban growth. Offered as SPAN 306, SPAN 406, and ETHS 306. Prereq: SPAN 202.

SPAN 425. Hispanic Intellectuals and Society: A Critical Approach. 3 Units.
This course offers an overview of the most important critical approaches to Spanish American culture and literature, with a socio-historical emphasis. Some of the authors we will discuss are Angel Rama, Jose Antonio Cornejo Polar and Nestor Garcia Canclini. We will analyze how the Latin American intellectuals had thought about specific issues such as identity, race, ideology, colonial and post-colonial relations with the metropolis and the process of formation of the nations in the continent. The class, the discussions, exams, oral presentations and papers will be in Spanish. Some of the readings must be in English, but most of them will be in Spanish. Offered as SPAN 325, SPAN 425, ETHS 325, WLIT 325 and WLIT 425.

SPAN 426. The Fantastic in Latin American Prose. 3 Units.
Introduction to a distinctive trend in contemporary Latin American literature, the prose portrayal of the "fantastic," a new narrative mode in Latin America. Critical examination of selected texts reveals new concepts of space and time and an increasing complexity of structure and style, one which juxtaposes and analyzes fantasy and reality. Offered as SPAN 326 and SPAN 426.

SPAN 433. Contemporary Caribbean Literature. 3 Units.
In addition to developing a general familiarity with the literature and history of this region, students will acquire an awareness of the interrelation of national identity, memory, and language in the texts produced by contemporary Caribbean authors, and of the cultural hybridity characteristic of this production. The themes treated by these authors include colonialism and postcolonialism, cultural and religious syncretism, and sexual politics. Offered as SPAN 333, SPAN 433, ETHS 333, WLIT 333 and WLIT 433.

SPAN 434. Mexican Literature. 3 Units.
The course studies, through a series of representative literary works, the most significant literary movements and styles in 20th and 21st Centuries Mexican Literature. Special attention will be paid to the political, aesthetic, and philosophical debates that have shaped the development of Mexican literature from the 1920s to the present, and to the different narrative techniques and ideologies that have characterized different historical periods, literary movements, and individual authors' styles in contemporary Mexican literature. Offered as SPAN 334 and SPAN 434. Prereq: SPAN 320

SPAN 439. Latin American Poetic Revolt. 3 Units.
Introduction to most important poets in contemporary Latin America, a region home to a significant number of eminent poets, including Nobel Laureates from Chile, Gabriela Mistral and Pablo Neruda. The course focuses on detailed textual analysis of pivotal works, combined with historical-literary perspective, so students gain insight into the diverse styles and tendencies that reflect the tumultuous history of poetry’s development in a relentless search for a Latin American cultural identity. Offered as SPAN 339, SPAN 439, WLIT 339 and WLIT 439.

SPAN 442. Latin American Feminist Voices. 3 Units.
Examination of the awakening of feminine and feminist consciousness in the literary production of Latin American women writers, particularly from the 1920s to the present. Close attention paid to the dominant themes of love and dependency; imagination as evasion; alienation and rebellion; sexuality and power; the search for identity and the self-preservation of subjectivity. Readings include prose, poetry, and dramatic texts of female Latin American writers contributing to the emerging of feminist ideologies and the mapping of feminist identities. Offered as SPAN 342, SPAN 442, ETHS 342, WGST 342, WLIT 342, and WLIT 442.

SPAN 443. The New Drama in Latin American. 3 Units.
Representative works of contemporary Latin American drama. Critical examination of selected dramatic works of twentieth-century Latin America provides students insight into the nature of drama and into the structural and stylistic strategies utilized by Latin American dramatists to create the "new theater,” one which is closely related to Latin American political history. Offered as SPAN 343, SPAN 434, ETHS 343, WLIT 343 and WLIT 434.

SPAN 445. Hispanic Autobiographical Writing. 3 Units.
The course studies issues of self-representation through the reading of autobiographical works from different periods from Latin America, Spain, and the U.S., and of theoretical works that address topics of first-person narratives, autobiography, and sub-alternity. Satisfies Global and Cultural Diversity requirement. Offered as SPAN 345 and SPAN 445. Prereq: SPAN 320.

SPAN 451. Hispanic Turn of the Century Literature. 3 Units.
Cultural and political transitions between 19th and 20th Century, between Spain and Latin America, and between literary models. Study of Spanish and Latin American writers and their literary connections (Generation of 1898, modernistas) in the context of colonial conflicts and economic changes. Offered as SPAN 351 and SPAN 451.
SPAN 453. Transatlantic Vanguard. 3 Units.  
Presentation of transatlantic tendencies of the early vanguard movements represented by poets from Spain, Central and South America. Beginning with the advent of Modernism in Latin America and Symbolism in Spain, this course will trace the development of resulting movements in the early twentieth century. Surrealism, Creationism, Futurism, Ultraism and Dadaism forged a vital link between poets and artists from the Americas and their European counterparts. We will focus on the similarities and differences between these “isms” while drawing conclusions about the uniqueness of vanguard movements on both sides of the Atlantic. Offered as SPAN 353 and SPAN 453.

SPAN 456. Afro-Hispanic Literature. 3 Units.  
This course will survey the literary and cultural production of writers and artists of African descent in Latin America and the Caribbean, paying attention to both their creative and theoretical texts. Discussion of questions of race and ethnicity will allow students to explore the ways in which these texts reframe the idea of national identity and cultural belonging in the context of the nation-state, whose traditional centrality is being weakened through the effects of migration and exile. Readings include works by writers from Cuba, Puerto Rico, Dominican Republic, Costa Rica, Colombia, Panama, Ecuador, and Peru. Offered as SPAN 356, SPAN 456, ETHS 356, WLIT 356 and WLIT 456.

SPAN 458. Latin American Cinema. 3 Units.  
This course is designed to introduce students to the basic tools of film analysis as well as to the major trends and movements in Latin American cinema from the 1960s to the present. Through the analysis of representative films from Latin America, the course will examine the development of a variety of cinematic styles, paying particular attention to the historical contexts in which the films were produced and to the political, cultural, and aesthetic debates that surrounded their production. Offered as SPAN 358, SPAN 458, ETHS 358, WLIT 358 and WLIT 458.

SPAN 485. Hispanic Literature in Translation. 3 Units.  
Critical analysis and appreciation of representative literary masterpieces from Spain and Latin America, and by Hispanics living in the U.S. Texts cover a variety of genres and a range of literary periods, from works by Cervantes to those of Gabriel García Márquez. The course will examine the relationship between literature and other forms of artistic production, as well as the development of the Hispanic literary text within the context of historical events and cultural production of the period. Counts toward Spanish major only as related course. No knowledge of Spanish required. Offered as ETHS 385, ETHS 485, SPAN 385, SPAN 485, WLIT 385, and WLIT 485. Prereq: Graduate standing.

Department of Music  
The Department of Music offers a range of degree programs and ensemble experiences for undergraduate and graduate students. Thanks to the diverse interests of our faculty, our students can explore everything from medieval music to rock and pop. The department offers the following degree programs:

- Music Bachelor of Arts (BA) within the context of liberal arts
- Music Education Bachelor of Science (BS), Master of Arts (MA), Master of Arts for Teacher Licensure (MAL), Doctor of Philosophy (PhD)
- Historical Performance Practice Master of Arts (MA), Doctor of Philosophy (PhD), Doctor of Musical Arts (DMA)
- Musicology Doctor of Philosophy (PhD)

Since 1968, the department has participated in a Joint Music Program (JMP) with the Cleveland Institute of Music (http://www.cim.edu) (CIM). Through our JMP, students enjoy the advantages of a top research university while receiving conservatory-level training in theory and performance. They also benefit from our active collaborations with the Cleveland Orchestra, the Rock and Roll Hall of Fame and Museum, the Cleveland Museum of Art, the Music Settlement, and other local cultural and educational institutions.

The Department of Music offers private instruction. Music majors should consult with their program advisor before registering for lessons. Non-major students interested in private instruction should visit the department office (Haydn 201) to begin the lesson registration process and learn further details.

A number of music ensembles (http://music.case.edu/ensembles) are open to all students. Entrance into the primary ensembles may be subject to a gateway audition; others require an audition for part assignment. Students may elect to earn one credit unit per semester for participation. Auditions for ensembles are held during the first week of classes each semester. Further information is available on the department website (http://music.case.edu).

Facilities

Haydn Hall

Haydn Hall houses the Department of Music faculty and staff offices, classrooms, the Kulas Music Library, the Music Education Resource Center, and The Core (see below). It is located in the heart of the Mather Quad. Originally a combination of a dormitory and classrooms, this building served as the only student center on campus. It was given to the college by Flora Stone Mather and named in honor of Hiram Collins Haydn, fifth president of Western Reserve University, pastor of the Old Stone Church, and the individual most active in convincing Western Reserve College to move to Cleveland. Charles F. Schweinfurth, the premier residential architect of Euclid Avenue (“Millionaires’ Row”) mansions, who also rebuilt the interior of the Old Stone Church in 1884 and designed Trinity Cathedral, designed Haydn Hall.

Florence Harkness Memorial Chapel

Harkness Chapel, built in 1902, features neo-Gothic architecture, antique oak and Georgia pine woodwork, and Tiffany windows. It is a warm, intimate, and acoustically resonant space for the performance of vocal and instrumental chamber music. The building provides space for concerts, music classes, and department recitals. Harkness Chapel was built to honor Florence Harkness Severance, the only daughter of Stephen Harkness and his second wife, Anna M. Richardson Harkness.

Kulas Music Library

Kulas Music Library is a satellite library of Kelvin Smith Library, the university’s main library. It contains more than 45,000 items, including music scores, books on music, sound recordings, video recordings, microforms, and music periodicals. The library also contains a listening room for use of the sound recording and video collections. Music majors at the university also have access to the Robinson Music Library of the Cleveland Institute of Music. The Case Western Reserve Kulas Music Library and the CIM Robinson Music Library coordinate acquisitions and services, and their collections reflect institutional strengths as well as support the CWRU-CIM Joint Music Program.
The Core

The Core is a Macintosh computer classroom and lab dedicated to mind, sound, and vision. The Core is a collaborative space for all CWRU students, faculty and staff, as well as the University Circle community, to gather and collaborate, design in visual and aural mediums, and create masterpieces. It offers not only computers and software, but also video and digital cameras and microphones for checkout, one-on-one tutorial time, classes, and a meeting space. The Core is actively involved in bringing technology to the community and it works closely with faculty in providing support facilities for the department’s technology-related courses.

Denison/Wade Rehearsal Facility

The Denison/Wade Rehearsal Facility, located on East 115th Street, is used primarily for ensemble rehearsals. This facility houses several Wenger practice rooms, one of which is a “virtual reality” acoustic room; a percussion studio; and a music library. Classrooms include the Wade Rehearsal Hall, Denison Rehearsal Hall, and Denison Chamber Room. The facility also has storage lockers available on a first-come first-serve basis. In general, Denison/Wade facilities are to be utilized by students who are music majors or are enrolled in Department of Music ensembles.

Kulas Collection of Early Instruments

The department maintains an impressive collection of modern reproductions of early instruments. The instruments are used by the Collegium Musicum, the Case/CIM Baroque Orchestra, and the department’s program in historical performance practice. The collection includes medieval, Renaissance, and baroque strings, as well as brass, woodwinds, and keyboards.

Music Education Resource Center

The department provides a resource center for music education students to prepare educational materials and research projects. The center is in Haydn Hall, Room 12, and contains a variety of audiovisual media, including a library of education-oriented music software. Students may borrow items from a large collection of music textbooks, educational recordings, testing materials, vocal and instrumental books, curriculum guides, and classroom instruments. Use of this center is encouraged, and sometimes required, for many of the projects and assignments in courses throughout the music education curriculum.

BA in Music (p. 231) | BS in Music Education (p. 232) | Minor (p. 235)

Undergraduate Programs

Majors

The Department of Music offers majors in music (BA degree) and music education (BS Degree). Students who wish to major in music or music education must pass a performance audition on an acceptable primary instrument or in voice and take a music theory placement test. Arrangements for all auditions and for the theory placement test must be made by following the procedures listed on the department website (http://music.case.edu). All performance and course requirements are detailed in the Undergraduate Music Handbook (http://music.case.edu/undergraduate-handbooks).

Double Major and Dual-Degree Opportunities. The department encourages qualified students to consider a double major in music and another subject. More than one half of music majors at Case Western Reserve pursue a double major. Typical combinations include the BA in music with theater, English, classics, psychology, sociology, or the natural sciences. Once the Arts and Sciences SAGES and General Education requirements have been met, a BA student can add another major by meeting the course and hour requirements found in this bulletin under the appropriate department. In most cases, it is possible to finish a double major with music in four years.

It is also possible to receive two degrees, although this may take more than four years. Typical combinations of dual degrees include the BA in music with the BS in engineering, or the BS in music education with the BM degree from the Cleveland Institute of Music. All admissions requirements must be met for each school, and course and hour requirements for each degree must be fulfilled. Students interested in dual degrees should declare their intent as early as possible and receive advice from faculty about both degrees.

BA in Music

The BA degree in music situates music study in the context of the liberal arts.

It requires that 43-51 of the total 120 semester credit hours necessary for the degree (69-77 for students in the audio recording concentration) be devoted to music study, with the remaining credits devoted to the SAGES and Arts and Sciences general education requirements, a possible minor program, and a liberal selection of elective courses.

Requirements for the BA in music are as follows:

Applied instruction on primary instrument:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUAP 121</td>
<td>Principal Performance Area I</td>
<td>2</td>
</tr>
<tr>
<td>MUAP 122</td>
<td>Principal Performance Area II</td>
<td>2</td>
</tr>
<tr>
<td>MUAP 20</td>
<td>Level 300 Applied Music Entrance Jury Exam</td>
<td>0</td>
</tr>
<tr>
<td>MUAP 321</td>
<td>Principal Level Performance Area V</td>
<td>2</td>
</tr>
<tr>
<td>MUAP 322</td>
<td>Principal Level Performance Area VI</td>
<td>2</td>
</tr>
<tr>
<td>MUAP 30</td>
<td>BA Performance Exit Jury Examination</td>
<td>0</td>
</tr>
</tbody>
</table>

Ensemble participation:

Eight semesters of ensemble participation for 0--1 credits each, of which six semesters must be in a Primary Ensemble designated for the student’s primary instrument. Primary ensembles for each instrument are listed in the Undergraduate Music Handbook.

Music theory and eurhythmics:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUTH 107</td>
<td>Theory for Music Majors I (CIM class)</td>
<td>4</td>
</tr>
<tr>
<td>or MUTH 101/105</td>
<td>Harmony-Keyboard I</td>
<td></td>
</tr>
<tr>
<td>MUTH 108</td>
<td>Theory for Music Majors II (CIM class)</td>
<td>4</td>
</tr>
<tr>
<td>or MUTH 102/106</td>
<td>Harmony-Keyboard II</td>
<td></td>
</tr>
<tr>
<td>MUTH 207</td>
<td>Theory for Music Majors III (CIM class)</td>
<td>4</td>
</tr>
<tr>
<td>or MUTH 201/205</td>
<td>Harmony-Keyboard III</td>
<td></td>
</tr>
<tr>
<td>MUTH 208</td>
<td>Theory for Music Majors IV (CIM class)</td>
<td>4</td>
</tr>
<tr>
<td>or MUTH 202/206</td>
<td>Harmony-Keyboard IV</td>
<td></td>
</tr>
<tr>
<td>MUDE 101</td>
<td>Eurhythmics I</td>
<td>0</td>
</tr>
</tbody>
</table>
A minor in electronics is available from the Department of Electrical Engineering and Computer Science in the Case School of Engineering.

A five-year, dual-degree program is also available in which the student earns a BA in music/audio and a BS in an elective field of engineering.

BS in Music Education

The mission of the Music Education Program is to prepare proactive scholar-practitioners who can incorporate productive attitudes (positivity, passion and resilience) with professional skills (critical thinking, creative inquiry and reflection) to demonstrate outcomes of a lifelong learner/educator (effective teaching to empower students). Proactive individuals will look for opportunities to lead and distinguish themselves in a positive manner, using scholarship (academic skills and resources) to effectively practice their craft (teach).

The nationally recognized program faculty are active in their respective professional organizations and as clinicians, conductors, lecturers, and researchers.

The BS degree in music education requires a total of 122 credits and is designed to educate professional teachers of music education for public and private schools. The program meets the requirements of the Ohio Department of Education to prepare students to take state-mandated teacher exams (Ohio Assessments for Educators) and apply for teaching licensure. Most states recognize the Ohio teaching license through reciprocity.

Music education students benefit from a wide range of instrumental, vocal, and general classroom methods courses. As an additional part of the program, students benefit from plentiful hands-on experiences by teaching sample lessons and conducting rehearsals in actual teaching situations.

Requirements for the BS in music education are as follows:

A. Core courses:

Music theory/Musicianship; eurythmics:
- MUTH 107 Theory for Music Majors I (CIM class) 4
- or MUTH 101/105 Harmony-Keyboard I
- MUTH 108 Theory for Music Majors II (CIM class) 4
- or MUTH 102/106 Harmony-Keyboard II
- MUTH 207 Theory for Music Majors III (CIM class) 4
- or MUTH 201/205 Harmony-Keyboard III
- MUTH 208 Theory for Music Majors IV (CIM class) 4
- or MUTH 202/206 Harmony-Keyboard IV
- MUTH 320 Form and Analysis (CIM class) 3
- MUDE 101 Eurhythmics I (Fulfills SAGES Phys Ed requirement; CIM class) 0
- MUDE 102 Eurhythmics II (Fulfills SAGES Phys Ed requirement; CIM class) 0

Music history/literature:
- MUDE 305 World Music in Education (Fulfills SAGES Global and Cultural Diversity requirement) 3
- MUHI 201 History of Western Music I 3
- MUHI 202 History of Western Music II 3

A minor in electronics is available from the Department of Electrical Engineering and Computer Science in the Case School of Engineering.
## Applied music lessons (every semester except student teaching):
- **MUAP 121** Principal Performance Area I: 2
- **MUAP 122** Principal Performance Area II: 2
- **MUAP 10** Progress Jury Examination: 0
- **MUAP 221** Principal Performance Area III: 2
- **MUAP 222** Principal Performance Area IV: 2
- **MUAP 20** Level 300 Applied Music Entrance Jury Exam: 0
- **MUAP 321** Principal Level Performance Area V: 2
- **MUAP 322** Principal Level Performance Area VI: 2
- **MUAP 323** Principal Performance Area VII: 2
- **MUAP 35** BS Music Education Jury Examination: 0

## Ensembles:
- Required Primary Ensemble (every semester except student teaching): 1
- Added ensemble (one full year, keyboard students may sign up for MUEN 386 as their added ensemble): 1

### B. Music Education Sequence

#### Methods:
- **MUED 240** Foundations of Music Education: 3
- **MUED 320** Technology Assisted Music Teaching and Learning: 3
- **MUED 350** General Music Methods A: 3
- **MUED 352** or **MUED 353** Instrumental Methods and Materials: 3
- **MUED 355** Vernacular Music in Education (Fulfills SAGES Departmental Seminar requirement): 3

**Course title changing to:** Vernacular Music in Education

#### Conducting and arranging:
- **MUED 275** Elements of Conducting: 2
- **MUED 276** Advanced Conducting: 2
- **MUED 310** Instrumental and Choral Arranging: 3

#### Secondary instrument classes:
- **MUED 200A** Basic Skills and Pedagogy: Voice: 1
- **MUED 200B** Basic Skills and Pedagogy: Guitar: 1
- **MUED 200C** Basic Skills and Pedagogy: Brass: 1
- **MUED 200E** Basic Skills and Pedagogy: Clarinet and Saxophone: 1
- **MUED 200F** Basic Skills and Pedagogy: Double Reeds and Flute: 1
- **MUED 200H** Basic Skills and Pedagogy: Strings: 1
- **MUED 200P** Basic Skills and Pedagogy: Percussion: 1

#### Student teaching:
- **MUED 396A** Student Teaching in Music Education: 9
- **MUED 396B** Student Teaching Seminar in Music Education: 3

### C. Professional Education Courses

- **EDUC 301** Introduction to Education: 3
- **EDUC 304** Educational Psychology: 3
- **EDUC 255** Literacy Across the Content Areas: 3

### SAGES Requirements
- 22 hours in addition to those major courses that fulfill SAGES requirements

1. • Strings: MUEN 385 Case/University Circle Orchestra
   • Winds/Percussion: MUEN 383 Symphonic Winds
   • Piano: MUEN 389 Keyboard Ensemble
   • Voice: MUEN 382 Case Concert Choir
   • Guitar: MUEN 355 Miscellaneous Ensembles
2. See: Required Methods and Secondary Instrument Courses by Music Education Focus Area, below
3. PSCL 101 General Psychology I is a prerequisite

### Required Methods and Secondary Instrument Courses by Music Education Focus Area

#### Choral/General Focus

**Required Methods Specialization Class:**
- **MUED 353** Choral Methods and Materials

**Secondary Instruments:**
- **MUED 200A** Basic Skills and Pedagogy: Voice
- **MUED 200B** Basic Skills and Pedagogy: Guitar
- **MUED 200C** Basic Skills and Pedagogy: Brass
- **MUED 200H** Basic Skills and Pedagogy: Strings
- **MUED 200P** Basic Skills and Pedagogy: Percussion

One of the following:
- **MUED 200E** Basic Skills and Pedagogy: Clarinet and Saxophone
- **MUED 200F** Basic Skills and Pedagogy: Double Reeds and Flute

#### Instrumental Focus - Winds/Percussion

**Required Methods Specialization Class:**
- **MUED 352** Instrumental Methods and Materials

**Secondary Instruments:**
- **MUED 200A** Basic Skills and Pedagogy: Voice
- **MUED 200C** Basic Skills and Pedagogy: Brass
- **MUED 200E** Basic Skills and Pedagogy: Clarinet and Saxophone
- **MUED 200F** Basic Skills and Pedagogy: Double Reeds and Flute
- **MUED 200H** Basic Skills and Pedagogy: Strings
- **MUED 200P** Basic Skills and Pedagogy: Percussion

#### Instrumental Focus - Strings

**Required Methods Specialization Class:**
- **MUED 352** Instrumental Methods and Materials

**Secondary Instruments:**
- **MUED 200A** Basic Skills and Pedagogy: Voice
- **MUED 200C** Basic Skills and Pedagogy: Brass
- **MUED 200E** Basic Skills and Pedagogy: Clarinet and Saxophone
- **MUED 200F** Basic Skills and Pedagogy: Double Reeds and Flute
- **MUED 200H** Basic Skills and Pedagogy: Strings
- **MUED 200P** Basic Skills and Pedagogy: Percussion

### Admission and Retention in Music Education

There are five decision points in the Music Education Program. For each of the decision points, there are three possible outcomes: unconditional admission to the next level; conditional admission with a prescribed remedial plan which when successfully completed will result in unconditional admission; or denial of admission. Denial of admission at any decision point means the student is no longer able to pursue a music education degree at Case Western Reserve.
Decision Point 1: Application for Admission to the Program

Official admission to the Music Education Program generally occurs at the end of the third semester of study. Admission to the program requires:

1. admission to Case Western Reserve University
2. acceptance as a music major through an audition process before matriculation
3. successful completion of MUED 240 Foundations of Music Education, including evaluation of an initial Teaching ePortfolio
4. a cumulative Case Western Reserve University GPA of 2.7 or better
5. submission of a signed Statement of Assurance of Good Moral Character, and
6. a satisfactory interview with music education faculty, documented on the Teacher Licensure Admission Assessment Form

Decision Point 2: Application for Advanced Standing

Application for Advanced Standing should be submitted by the end of the second semester after Decision Point 1 (usually during the fifth semester of study). Application for Advanced Standing requires:

1. a successful review of the updated Teaching ePortfolio
2. submission of a current Academic Requirements Report documenting the following: a cumulative GPA of 2.7 or better, a music GPA of 2.7 or better, and an education GPA of 3.0 or better
3. a passing score on the Candidate Disposition Assessment Inventory completed by the music education faculty

Decision Point 3: Application for Student Teaching

Application for Student Teaching should be completed by the end of the semester prior to student teaching (seventh semester of study). The application requires:

1. a successful review of the updated Teaching ePortfolio
2. submission of a current Academic Requirements Report documenting the following: a cumulative GPA of 2.7 or better, a music GPA of 2.7 or better, and an education GPA of 3.0 or better
3. a passing score on the Candidate Disposition Assessment Inventory completed by the music education faculty
4. passing a TB test
5. presenting documentation of Hepatitis B vaccination
6. passing an official criminal background check
7. a satisfactory interview with music education faculty

Decision Point 4: Retention during Student Teaching

Retention during Student Teaching should be completed by midterms of the student teaching semester. The assessment requires:

1. a passing scores on the Candidate Disposition Assessment Inventory completed by the music education faculty
2. passing scores on the Case Student Teaching Mid-semester Assessment by the cooperating teacher(s) and university supervisor
3. completion of a self-reflection essay

Decision Point 5: Application for Initial Licensure

Application for Initial Licensure occurs after successful completion of all degree requirements. This application requires:

1. a successful review of the updated Teaching ePortfolio
2. submission of a current Academic Requirements report documenting the following: a cumulative GPA of 2.7 or better, a music GPA of 2.7 or better, and an education GPA of 3.0 or better
3. a passing score on the Candidate Disposition Assessment Inventory completed by the music education faculty
4. passing scores on Ohio licensure exams
5. completion of the Case Teacher Licensure Exit Interview and Survey
6. passing scores on the Case Student Teaching Final Assessment by the cooperating teacher(s) and university supervisor
7. successful completion of Student Teaching coursework with a grade of B or better:

- MUED 396A & MUED 396B: Student Teaching in Music Education and Student Teaching Seminar in Music Education (12 credits)
- MUED 496A & MUED 496B: Student Teaching in Music Education and Student Teaching Seminar in Music Education (for master's students seeking licensure) (12 credits)

After successfully completing all requirements at the five decision points, the student is recommended by the university’s director of teacher education for the Ohio Provisional Music (Pre-K-12) License to teach music in the public schools in Ohio and more than 40 reciprocating states.

Completion of the BS degree does not ensure that the State of Ohio music teacher license will be awarded. Additional information is available from the Teacher Licensure (p. 312) section in this bulletin.

Departmental Honors

Departmental honors programs for the BA and BS degrees have the following admission and completion requirements:

For all students, admission to honors status requires an overall GPA of at least 3.2, a music GPA of at least 3.5, evidence of exceptional musicianship and scholarly interests, petition to the music faculty, nomination by a faculty member, and acceptance by the music faculty. The honors project must first be approved by the faculty project advisor, with the specific project timeline to be determined in consultation with the advisor. The student must submit a proposal to the faculty before
the project start date, typically by the midpoint of the spring semester preceding the senior year.

For BA students, second-semester sophomore or junior standing is required for admission to honors status. The honors project should then be completed as part of the SAGES Capstone Seminar. For BS students, admission to honors status requires advanced standing in music education. The student must register for independent study or an approved seminar during the project period, and the honors project may not be pursued or completed during student teaching.

**Minor**

The music minor requires 15 credits: units: 6 in music theory (MUTH), 6 in music history or appreciation (MUHI or MUGN) and 3 others, which may include MUAP or MUEN. For questions regarding eligible course substitutions, please contact the Department of Music Minor Advisor.

**Music Theory:**
- **MUTH 103** Theory I 6
- **MUTH 104** Theory II

**Music History:**
- Any two MUHI or MUGN courses 6

**At least 3 additional credit units, either in MUAP or MUEN** 3

**Total Units** 15

A minor in music education may be devised in consultation with a music education advisor. CIM students may pursue a minor in music history by taking 15 hours of MUHI courses. The department welcomes students’ initiative in the development of minor programs suited to their needs. Courses can be substituted with the approval of the music minor program advisor.

**Electives for Non-Music Majors**

Electives designed for students not majoring in music are:

- **MUTH 103** Theory I 3
- **MUTH 104** Theory II 3
- **MUGN 201** Introduction to Music: Listening Experience I 3
- **MUGN 202** Introduction to Music: Listening Experience II 3
- **MUGN 250** Topics in Music for non-majors 3
- **MUGN 308** Digital Music: Composition and Production 3
- **MUGN 309** Audio Production in Pro Tools 3
- **MUGN 212** History of Rock and Roll 3
- **MUGN 215** History and Styles of Jazz 3

Ensembles (http://music.case.edu/ensembles) (MUEN) are open to all students. Placement auditions are required. For more information about the department's ensemble offerings, please contact the individual ensemble director.

Music lessons for students not majoring in music (http://music.case.edu/music-lessons-for-students-not-majoring-in-music) are available with consent of the department (additional fee for non-music majors). For more information about the department's applied music (MUAP) offerings, please visit the Current Student/General (http://music.case.edu/general) section of the Department of Music website.

MA Programs (p. 235) | PhD and DMA Programs (p. 236) | Applied Music (p. 237)

**Graduate Programs**

General descriptions are given here; complete information on all degrees is available from the department (http://music.case.edu/prospective/graduate). Admission to each degree follows established guidelines of the School of Graduate Studies. Scores from the Graduate Record Examination are required for admission to programs in music history, musicology, and historical performance practice, and an audition is necessary for students interested in the historical performance practice program.

**Fast Track MA/PhD Program**

Students in the MA in music history and literature program are eligible for a fast track option to the PhD in historical musicology. To qualify for this option, students must complete 36 hours in the MA program and are advised to pursue the thesis option. By the end of the third semester of study (prior to the completion of the 36 hours), the student must inform the coordination of graduate studies of his/her desire to enter the PhD program, and, in consultation with the director, must present a petition to the musicology faculty for candidacy. Once faculty consent is secured, all remaining requirements of the degree program, as detailed above, remain the same.

**MA in Music Education**

This degree is built on a set of foundation courses in philosophy, curriculum, psychology, research, evaluation, and musicianship. Additional courses and independent studies enable students to tailor programs to their interests and needs.

Three degree options are available. Students who choose Plan A (thesis option) write a thesis based on original research and defend the thesis in an oral examination. Students who choose Plan B (comprehensive exam option) complete a comprehensive examination in music education. Applicants for Plans A or B should have a bachelor’s degree in music education, an undergraduate GPA of 3.0 or better, and at least one year of successful music teaching experience, usually in the public schools.

Students seeking teacher licensure credentials pursue Plan C (MA for Licensure, or MAL). The program includes a core of graduate music education courses, graduate music courses, undergraduate music education methods courses, and one semester of student teaching. Applicants for the MAL should have a bachelor’s degree in music (BA or BM), an undergraduate GPA of 3.0 or better, and some prior experience in working with children. The regulations for students in the BS program regarding advanced standing, grade point averages, and the Ohio Assessments for Educators exam apply to graduate students in Plan C as well. Completion of the Plan C degree does not ensure that the State of Ohio music teacher license will be awarded.

Foundation courses for Plan A and Plan B include the following ranges:

- **Music education core of philosophy, curriculum, and research** 12-15
- **Music core of history, theory, and applied music** 9-12
- **Electives** 3-9

**Total Units** 24-36

Students in Plan A receive 6 credit hours for thesis research. Students in Plan B complete a comprehensive written examination at the conclusion of course work, whereas students in Plan C complete a comprehensive oral examination.
A minimum of 30 credit hours is required for Plans A and B. Plan C requires a minimum of 65 hours, including:

- **Music education licensure core** 35
- **Teacher licensure professional education core** 9
- **Graduate music education core** 12
- **Graduate music core** 9

**Total Units** 65

To remain in Plan C's MAL program, students must meet GPA and professional standards each year. For more information, contact the area head of music education.

**PhD Degree**

The PhD degree is offered in two fields: (1) musicology (with concentrations in music history and historical performance practice), and (2) music education.

**PhD in Musicology**

The PhD in historical musicology is granted in recognition of superior scholarly ability and attainment. Award of the degree is based not only on computation of time or enumeration of courses, but also on distinguished work. Highly qualified applicants may enter this program directly upon completion of a bachelor's degree. All programs of study are formulated to suit the individual needs of the student and require the consent of the advisor.

**Music History Concentration**

The PhD requires 36 credit hours of course work and an additional 18 credit hours of dissertation research. Required course work includes MUHI 610 Bibliography and Research Methods in Music and MUHI 612 Analysis for Music Historians as well as three doctoral seminars. In the first two years, students will be expected to take three courses (or 9 credits) per semester, for a total of 36 hours.

Students admitted to the program will take diagnostic examinations prior to the start of classes in their first year. Based on these examinations, students may be required to enroll in specific courses to address deficiencies; these course credits may be applied toward the degree requirements. At the end of the first year of study, the musicology faculty will conduct a formal review with each student. This process will include an evaluation of progress to date and advisement regarding the remainder of the program.

A written summary of this review, along with course grades and materials, will constitute the beginnings of the portfolio maintained by the coordinator of graduate studies that will be the basis for considering each student's advancement into the PhD program.

At the beginning of the fall in the third year of study, students will take comprehensive examinations, which will also function as qualifying exams for advancement to the PhD program. These examinations will consist of written and oral sections, and will be conducted and evaluated by the musicology faculty. Following the examinations, the faculty will review each student's portfolio and, based on work contained therein, make a decision regarding advancement to candidacy in the PhD program. Students who do not advance but who have done satisfactory work will be eligible to receive the MA in music history at this juncture.

Students who advance to candidacy for the PhD will register for dissertation research credits and begin research for the dissertation. Working with a faculty advisor, each student will develop a proposal for the dissertation, which will be presented in writing to the faculty no later than the end of the third year of study. It is expected that the fourth and possibly fifth year of study will be devoted to work on the dissertation. Upon completion of the thesis, each student will present a formal defense to the musicology faculty.

Under the rules of the School of Graduate Studies, a student must complete the thesis no later than five years after registering for the first dissertation research (701) credits.

**Historical Performance Practice Concentration**

The PhD in historical musicology with a concentration in historical performance practice requires a minimum of 36 hours of course work, seminars, and tutorials, and an additional 18 credit hours of dissertation research. Course distribution is as follows:

- **Bibliography and research** 3
- **Performance practices** 9
- **Notation-theory** 9
- **Doctoral Seminars** 6
- **MUAP 751 Doctoral Lecture-Recital and Document I** 0 - 3

**Total Units** 27-30

Remaining hours are freely elected in music history and research with the advisor's approval. At least three semesters of applied music (0 credits) are required. Ensemble participation is also required for performance practice students but does not earn credit hours toward the degree.

For other musicology students, private lessons at the 500 level, although not required, may be counted up to a maximum of six credits, at the discretion of the advisor.

Examinations include initial placement tests in history and theory; reading tests in two foreign languages pertinent to the student's field; and comprehensive examinations in history and theory, including written and oral sections, prior to admission to candidacy. Upon completion of the dissertation, an oral defense is held. In addition, performance practice students must audition as part of the admissions process. The candidate must teach a college-level course in music history and literature (or historical performance practice) under the supervision of a faculty member, or have had the equivalent experience before the dissertation is completed.

**PhD in Music Education**

The doctorate in music education is offered to persons who have shown a strong and continuing dedication to music teaching and scholarship. Applicants must have completed at least three years of full-time music teaching, usually in the public schools. The degree is designed to prepare professionals to assume positions of leadership in elementary, secondary, and collegiate instruction. Prior to graduation, doctoral students demonstrate competency in teaching, research, and musicianship. Every effort will be made to plan a program based on individual student needs and interests while maintaining standards of musical and scholarly excellence. Electives, therefore, will be chosen in consultation with a faculty advisor in order to ensure a balance between individual interests and traditional graduate expectations. To remain in the program, students must meet GPA and professional standards each year. For more information, contact the area head of music education.
A total of 60 credit hours is required for the doctoral degree beyond the master’s level. Courses include:

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music education: research, philosophy, cognition/psychology, curriculum, and assessment</td>
<td>15</td>
</tr>
<tr>
<td>Music: theory, history, applied music</td>
<td>9-12</td>
</tr>
<tr>
<td>Outside cognate</td>
<td>6</td>
</tr>
<tr>
<td>Music education electives</td>
<td>9-12</td>
</tr>
<tr>
<td>Dissertation</td>
<td>18</td>
</tr>
<tr>
<td><strong>Total Units</strong></td>
<td><strong>57-63</strong></td>
</tr>
</tbody>
</table>

A qualifying examination follows the completion of course work, prior to beginning research for the dissertation. Upon completion of the dissertation, an oral defense is held. The dissertation topic is chosen by the student in consultation with the faculty.

**DMA in Historical Performance Practice**

This doctorate is granted in recognition of outstanding performing ability in early music combined with superior scholarly ability in the field of historical performance practice. All programs are formulated to suit the needs of the individual student and require the consent of a faculty advisor.

A minimum of 36 hours of course work, seminars, and tutorials is required. Distribution is as follows:

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bibliography and Research</td>
<td>3</td>
</tr>
<tr>
<td>Performance Practices</td>
<td>6-9</td>
</tr>
<tr>
<td>Notation-Theory</td>
<td>9</td>
</tr>
<tr>
<td>Doctoral Seminars</td>
<td>3-6</td>
</tr>
<tr>
<td>MUAP 751 Doctoral Lecture-Recital and Document I</td>
<td>0 - 3</td>
</tr>
<tr>
<td>MUAP 752 Doctoral Lecture-Recital and Document II</td>
<td>3</td>
</tr>
<tr>
<td>Electives chosen from music history and research (with advisor approval)</td>
<td>3</td>
</tr>
<tr>
<td>MUAP 753 Doctoral Lecture-Recital and Document III</td>
<td>1 - 6</td>
</tr>
<tr>
<td><strong>Total Units</strong></td>
<td><strong>28-42</strong></td>
</tr>
</tbody>
</table>

Applied music (0 credits) must be taken every semester the student is on campus. Ensemble participation is required but does not earn credit hours toward the degree.

Examinations include a performance audition; initial placement tests in history and theory; reading tests in two foreign languages pertinent to the student’s field; and a comprehensive examination with history, theory, performance practice, and oral sections. Exceptional students may be admitted to a combined MA/DMA degree program in early music.

**Applied Music**

All MA and PhD degree students in the department must satisfy the applied music requirements specified in their degree programs. Graduate students who anticipate private lesson instruction in their programs should consult an advisor before registration. Students register for individual applied music instruction in courses titled Principal Performance Area and Secondary Performance Area.
MUAP 10. Progress Jury Examination. 0 Units.
Progress Jury Examination (All BA and BS Music Majors)

MUAP 11. Recital Class. 0 Units.

MUAP 121. Principal Performance Area I. 2 Units.
Limited to music and music education majors. Recommended preparation: Entrance Jury/Audition

MUAP 122. Principal Performance Area II. 2 Units.

MUAP 131. Secondary Performance. 1 - 2 Unit.
Secondary instrumental or vocal instruction (undergraduate level). Each student has the option of taking one-hour weekly lessons (2 credit units) or half-hour weekly lessons (1 credit unit). The applied lesson fee is waived for all music majors. Contact the Department of Music directly for registration consent.

MUAP 20. Level 300 Applied Music Entrance Exam. 0 Units.
Level Jury Examination

MUAP 221. Principal Performance Area III. 2 Units.
Limited to music and music education majors. Prereq: MUTH 107 or MUTH 101/105, MUAP 122, Passed Progress Jury. Coreq: MUTH 107 or MUTH 101/105.

MUAP 222. Principal Performance Area IV. 2 Units.

MUAP 223. Principal Performance Area V. 2 Units.
Limited to music and music education majors. Prereq: MUTH 207 or MUTH 201/205, MUAP 222. Coreq: MUTH 207 or MUTH 201/205.

MUAP 224. Principal Performance Area VI. 2 Units.
Limited to music and music education majors. Prereq: (MUTH 208 or MUTH 202) and MUAP 223. Coreq: MUTH 208 or MUTH 202.

MUAP 225. Principal Performance Area VII. 2 Units.
Limited to music and music education majors. Prereq: MUAP 224.

MUAP 226. Principal Performance Area VIII. 2 Units.
Limited to music and music education majors. Prereq: MUAP 225.

MUAP 25. BA Exit Jury Examination. 0 Units.
BA Exit Jury Examination (Audio and General Music Concentrations)

MUAP 26. BA Exit Jury Examination. 0 Units.
BA Exit Jury Examination (Music History, Music Theory, and Early Music Performance Practice)

MUAP 30. BA Performance Exit Jury Examination. 0 Units.
BA Performance Exit Jury Examination

MUAP 321. Principal Level Performance Area V. 2 Units.

MUAP 322. Principal Level Performance Area VI. 2 Units.
Limited to music and music education majors. Prereq: (MUTH 208 or MUTH 202) and MUAP 321. Coreq: MUTH 208 or MUTH 202.

MUAP 323. Principal Performance Area VII. 2 Units.
Limited to music performance and music education majors.

MUAP 324. Principal Performance Area VIII. 2 Units.
Limited to music performance and music education majors.

MUAP 35. BS Music Education Jury Examination. 0 Units.
BS Music Education Jury Examination

MUAP 421. Principal Level Performance Area VII. 2 Units.
Limited to music and music education majors. Prereq: MUAP 322.

MUAP 422. Principal Level Performance Area VII. 2 Units.
Limited to music and music education majors. Prereq: MUAP 421.

MUAP 500. Applied Music/Ensembles. 1 - 3 Unit.
Registration to reflect combined participation in a number of Historical Performance Ensembles, each of which is taken for 0 credit hours.

MUAP 521. Principal Performance Area IX. 0 - 3 Units.
Limited to music and music education majors.

MUAP 522. Principal Performance Area IX. 0 - 3 Units.
Limited to music and music education majors.

MUAP 523. Principal Performance Area IX. 0 - 3 Units.
Limited to music and music education majors.

MUAP 524. Principal Performance Area IX. 0 - 3 Units.
Limited to music and music education majors.

MUAP 525. Principal Performance Area IX. 0 - 3 Units.
Limited to music and music education majors.

MUAP 526. Principal Performance Area IX. 0 - 3 Units.
Limited to music and music education majors.

MUAP 531. Secondary Performance. 0 - 3 Units.
Secondary instrumental or vocal instruction (graduate level). Each student not majoring in music has the option of taking one-hour weekly lessons (2 credit units) or half-hour weekly lessons (1 credit unit). The applied lesson fee is waived for all music majors. Contact the Department of Music directly for registration consent.

MUAP 550. Applied Music/Ensembles. 1 - 3 Unit.
Registration to reflect combined participation in a number of Historical Performance Ensembles, each of which is taken for 0 credit hours.

MUAP 600. Historical Performance Exit Jury Examination. 0 Units.
Historical Performance Exit Jury Examination, generally taken at the end of the second semester.

MUAP 651. M.A. Lecture - Recital and Document. 3 - 6 Units.
M.A. Lecture - Recital for students in Historical Performance Practice.
MUAP 700. Historical Performance Recital. 0 Units.
Historical Performance Recital. Intended to demonstrate mastery of historically-informed performance in a number of different national styles.

MUAP 751. Doctoral Lecture-Recital and Document I. 0 - 3 Units.
MUAP 752. Doctoral Lecture-Recital and Document II. 3 Units.
MUAP 753. Doctoral Lecture-Recital and Document III. 1 - 6 Unit.

MUAR Courses

MUAR 151B. Case Audio Internship I. 1 Unit.
Development of recording engineering skills through professional level work in the Harkness audio service. Recommended preparation: Open only to audio recording majors.

MUAR 152B. Case Audio Internship II. 1 Unit.
Recommended preparation: MUAR 151B.

MUAR 153B. Case Audio Internship III. 1 Unit.
Recommended preparation: MUAR 152B.

MUAR 154B. Case Audio Internship IV. 1 Unit.
Recommended preparation: MUAR 153B.

MUAR 200. Audio Recording I. 2 Units.
A study of basic recording principles and systems and techniques of recording and editing. Recommended preparation: Audio recording majors only.

MUAR 201. Audio Recording II. 2 Units.
Further study of basic recording principles and systems with an introduction to digital recording. Recommended preparation: MUAR 200.

MUAR 202. Pro Tools Production I. 2 Units.
Pro Tools is the Industry standard for digital Audio Production. This course follows the avid curriculum for Pro Tools user certification. Requires a personal laptop computer (Mac preferred) with Pro Tools 10 and the complete production toolkit software. Prereq: Audio Recording majors only.

MUAR 203. Pro Tools Production II. 2 Units.
Pro Tools is the Industry standard for digital Audio Production. This course follows the avid curriculum for Pro Tools user certification. Requires a personal laptop computer (Mac preferred) with Pro Tools 10 and the complete production toolkit software. Prereq: MUAR 203 and Audio Major.

MUAR 250. Audio Recording for Non-Majors. 2 Units.
This is a hands-on course for musicians who wish to understand the processes for recording music and speech that will be beneficial to their musical careers. Topics include microphone techniques, signal processing, delivering audio masters, computer workstations, audio software and the business of music.

MUAR 251B. Case Audio Recording Internship I. 0 Units.
Professional level work in the Case Western Reserve University Harkness audio service.

MUAR 252B. Case Audio Recording Internship II. 0 Units.

MUAR 253B. Case Audio Recording Internship III. 0 Units.

MUAR 254B. Case Audio Recording Internship IV. 0 Units.

MUAR 300. Advanced Recording Techniques I. 2 Units.
A study of advanced microphone, recording, and monitoring systems and techniques with an emphasis on two track digital recordings of classical music and critical listening. Recommended preparation: MUAR 201.

MUAR 301. Advanced Recording Techniques II. 2 Units.
Further study of advanced microphone, recording, and monitoring systems and techniques, with an emphasis on two track digital recordings of large ensemble classical music. Recommended preparation: MUAR 300.

MUAR 302. Multitrack Recording Techniques I. 2 Units.
A study of multitrack recording and mixdown techniques. Recommended preparation: MUAR 201. Audio recording majors only.

MUAR 303. Multitrack Recording Techniques II. 2 Units.
Further study of multitrack recording and mixdown techniques, with an emphasis on synchronization to video. Recommended preparation: MUAR 302.

MUAR 310. Recording Studio Maintenance I. 1 Unit.
Study of techniques for optimizing professional recording equipment performance. Recommended preparation: MUAR 201. Audio recording majors only.

MUAR 311. Recording Studio Maintenance II. 1 Unit.

MUAR 320. Acoustics of Music I. 1 Unit.
A seminar in the basic concepts of musical acoustics and research in this area. The students actively participate in experiments exploring various topics in musical acoustics.

MUAR 321. Acoustics of Music II. 1 Unit.
A seminar in the basic concepts of musical acoustics and research in this area. The students actively participate in experiments exploring various topics in musical acoustics.

MUAR 322. Recording Workshop I. 1 Unit.
Recording Workshop provides an increased level of hands-on intensive study of microphone placement. Each week a different instrument or group of instruments will be available for experimentation. Each class represents a recording session centered on a specific instrument, resulting in a comprehensive set of test recordings at the end of each semester. These will provide the basis of reference for future recording decisions. Recommended preparation: MUAR 200.

MUAR 323. Recording Workshop II. 1 Unit.
Recording Workshop provides an increased level of hands-on intensive study of microphone placement. Each week a different instrument or group of instruments will be available for experimentation. Each class represents a recording session centered on a specific instrument, resulting in a comprehensive set of test recordings at the end of each semester. These will provide the basis of reference for future recording decisions. Recommended preparation: MUAR 200.

MUAR 380. Junior Recording Techniques Thesis. 3 Units.

MUAR 385. Recording Studio Internship. 4 Units.

MUAR 390. Senior Recording Tech Thesis/Senior Capstone. 6 Units.
Students will originate, design, organize, and complete a project that will demonstrate and document proficiency with his/her accumulated audio recording technology skills. This project must include evidence of critical thinking, clear planning, and establishment of reasonable goals with an appropriate plan of action. There is a significant written component that requires regular submission of drafts, progress reports, evidence of project advancement, and a final written document. There must also be a public presentation of the project in a venue approved by the department. Counts as SAGES Senior Capstone.
MUED Courses

MUED 240. Foundations of Music Education. 3 Units.
An introduction to and overview of the music education profession. Philosophical, historical and psychological perspectives on music education in schools, including contemporary topics and trends. Introduction of Ohio academic content standards and curriculum model for music, along with K-12 National Music Standards. Observation of area music teachers and peer-teaching experience. Recommended preparation: Music education major or permission.

MUED 275. Elements of Conducting. 2 Units.
This course is designed to develop the physical tools, and philosophical and aesthetic ideologies necessary for students to conduct in an effective and appropriate manner. Students develop baton technique through systematic physical pattern exercises, and class and field conducting experiences (elementary through adult). Observations and written evaluations of Cleveland Orchestra rehearsals and concerts, along with video analysis/self-evaluation of personal conducting experiences are among the activities required in this course. Topics and content include: philosophical foundations for the conductor, considerations for selecting repertoire and creating a supportive learning environment; rehearsal techniques; planning for the rehearsal and record keeping; rehearsal management; group motivation; score analysis and preparation; participation in professional activities; effective use of technology for the conductor; and national, state, and professional standards. Clinical/Field experiences (all ages) required.

MUED 276. Advanced Conducting. 2 Units.
This course continues in-depth development of the physical tools, and philosophical and aesthetic ideologies presented in MUED 275. Students develop baton techniques (with experiences in complex and changing time signatures) through systematic physical/pattern exercises, along with continuous evaluations, from their class and field conducting experiences (elementary through adult). Observations and written critiques from historically significant Master Conductors (from videos in the University's Music Library), along with video analysis of personal class and field conducting, are among the activities required in this course. Topics and content include: philosophical foundations for the conductor, considerations for selecting repertoire and creating a supportive learning environment; rehearsal techniques; planning for the rehearsal and record keeping; rehearsal management; group motivation; score analysis and preparation; participation in professional activities; effective use of technology for the conductor; and national and state standards. Clinical/Field experiences (all ages) required.

MUED Courses

MUED 200A. Basic Skills and Pedagogy: Voice. 1 Unit.
Designed for music education majors to provide the fundamentals of teaching methods for various instruments. Recommended preparation: Music education majors. Non-music majors accepted with consent of department.

MUED 200B. Basic Skills and Pedagogy: Guitar. 1 Unit.
Designed for music education majors to provide the fundamentals of teaching methods for various instruments. Recommended preparation: Music education majors. Non-music majors accepted with consent of department.

MUED 200C. Basic Skills and Pedagogy: Brass. 1 Unit.
This course is designed to provide music education majors with basic skills and pedagogy in the areas of group and individual brass instruction techniques. The course will consist of two components: applied study on each brass instrument; and study/discussion of current pedagogical practices. Students need not have completed any prior music education courses prior to enrolling.

MUED 200E. Basic Skills and Pedagogy: Clarinet and Saxophone. 1 Unit.
Designed for music education majors to provide the fundamentals of teaching methods for various instruments. Recommended preparation: Music education majors. Non-music majors accepted with consent of department.

MUED 200F. Basic Skills and Pedagogy: Double Reeds and Flute. 1 Unit.
Designed for music education majors to provide the fundamentals of teaching methods for various instruments. Recommended preparation: Music education majors. Non-music majors accepted with consent of department.

MUED 200H. Basic Skills and Pedagogy: Strings. 1 Unit.
Designed for music education majors to provide the fundamentals of teaching methods for various instruments. Recommended preparation: Music education majors. Non-music majors accepted with consent of department.

MUED 200P. Basic Skills and Pedagogy: Percussion. 1 Unit.
Designed for music education majors to provide the fundamentals of teaching methods for various instruments. Recommended preparation: Music education majors. Non-music majors accepted with consent of department.

MUED 220. Marching Band Techniques. 1 Unit.
This course is designed to provide music education majors with the training and techniques to effectively direct a marching band. Topics will include rehearsal methodology, drill design, and arranging. The course will meet synchronously with the CWRU Marching Spartans as the lab portion of the class and at a time TBD once per week to cover the content areas. Coreq: MUEN 384.
MUED 305. World Music in Education. 3 Units.
This course acquaints students with the use of world music, or multicultural music, in the music education classroom. Students are given an overview of the history of world music within American music education, discuss topics related to world music in education, research diverse world music practices, and lead lessons based on this research. Topics and content include: definitions of world/multicultural music; philosophical basis for world music in education; diversity in our Cleveland community; authenticity; ethnomusicology; informal/formal music learning; international perspectives; pedagogical approaches; addressing the State and National Standards through world music in education; and the development of culturally informed music pedagogy based on the study of diverse music. Throughout the course students will become acquainted with the music of diverse cultures and people groups; these will be chosen in part based on student's own research interests. In addition to the musical cultures chosen by students for study and presentation, the music of The Gambia, West Africa; the Caribbean; and India will be highlighted during in-class activities and lessons. Recommended preparation: MUED 240.

MUED 310. Instrumental and Choral Arranging. 3 Units.
Techniques of writing and arranging for instruments of the band and orchestra and voice. Study of scoring problems for school instrumental and vocal groups of all ages and abilities.

MUED 320. Technology Assisted Music Teaching and Learning. 3 Units.
Fundamental concepts and skills for using technology in music teaching and learning. This project-oriented class will develop knowledge and competencies related to electronic musical instruments, MIDI sequencing, music notation software, computer-assisted instruction, digital media, the Internet, information processing, computer systems, and lab management as they relate to music education in K-12 schools. Recommended preparation: MUED 240. Offered as MUED 320 and MUED 420.

MUED 350. General Music Methods A. 3 Units.
General Music A introduces student to methods and materials for planning and implementing general music experiences for all ages, with concentration on Pre-K through sixth grade children. Topics of the course include: multiple meanings of music for children; characteristics/needs of young children and creating a supportive learning environment; theories of music learning and teaching; learning styles and collaborative learning; assorted teaching methods, rhythm, pitch, listening, movement, performing, composing; curriculum design; technology for music instruction; multicultural music; music for exceptional children; integrating music with the arts and other curricula; motivation and classroom management; lesson planning and record keeping; developing a personal philosophy of music education; national, state, and professional standards; and assessment. Clinical/Field experiences (Clinical-all ages; Field-focus on Pre-K through elementary) required.

MUED 352. Instrumental Methods and Materials. 3 Units.
This course acquaints students with effective ways to develop, organize and maintain a successful instrumental program for any age group, based on a comprehensive instrumental music education model. Students are given a "womb to tomb" view of the instrumentalists' development, including physiological development and age appropriate instrumental exceptions. Topics and content include: philosophical basis for music education, considerations for selecting repertoire including multicultural music; rehearsal techniques; assessment and record keeping; planning for the rehearsal; recruitment, auditioning, and placement; motivation and classroom management; team teaching and collaborative learning; managing an instrumental program; participation in professional activities; effective use of technology in the instrumental program; philosophy; and national, state, and professional standards. Clinical/Field experiences (all ages) required. Recommended preparation: MUED 276.

MUED 353. Choral Methods and Materials. 3 Units.
This course acquaints students with effective ways to develop a successful choral program for any age group, based on a comprehensive choral music education model. Students are given a "womb to tomb" view of the singing voice, including physiological development, age appropriate vocal expectations, and establishing and maintaining vocal health. Topics include: philosophical basis for vocal music education; the child voice, the adolescent voice, and the adult voice; vocal tone; considerations for selecting repertoire including ensemble assessment, music evaluation, and multicultural music; rehearsal techniques, collaborative learning, and motivation; planning for the rehearsal; developing conducting technique; recruitment, auditioning, placement, score analysis and preparation; classroom management; managing a choral program; participation in professional activities; effective use of technology in a choral program; and national state, and professional standards. Clinical/Field experiences (all ages) required. Recommended preparation: MUED 276.

MUED 355. Vernacular Music in Education. 3 Units.
This Music Education Department Seminar brings together all strands of the Music Education program by focusing on curriculum as the organizational element of instruction. Topics and content include: understanding the issues presented by special learners; techniques for integrating special learners into the music teaching environment; developing learning outcomes; designing instruction; planning classroom experiences; defining assessment and measurement; assessment techniques and instruments for the music classroom; and exploring elements of school music program organization and administration. Professional writing and clinical and field experiences will be a large part of the activities in this course. This course is presented in a seminar format that provides for discussions of classroom topics and commentary on field experiences. Counts as SAGES Departmental Seminar.
MUED 391. Music in Early Childhood. 3 Units.
The goal of the course is to provide students with an understanding of the role of music in early childhood and approaches to music education with young children. Students will experience an overview of selected theories of musical development of young children, discuss the importance of music to various areas of child development, explore cultural perspectives and influences on musical development, evaluate curricular materials and methods used in early childhood music education, observe children's music making in early childhood classrooms, and develop teaching skills for early childhood music settings. Topics and content of this course include: music's role in early childhood development; music aptitude and its measurement; theories of early childhood music learning; early childhood making; evaluating curricular materials for early childhood music; the importance of play in early childhood musical development; incorporating State and National Music Education Standards; designing instruction for early childhood music settings; assessment in early childhood music; cultural perspectives on music in early childhood; cultural influences on musical development; music therapy with young children; benefits of family interaction in music; the role of listening in early childhood musical development; and formal music instruction with young children. The class will participate in a weekly service learning project providing music instruction for young children and parents or caregivers from an underserved population. Offered as MUED 391 and MUED 491.

MUED 396A. Student Teaching in Music Education. 9 Units.
Teaching music in both elementary and secondary schools, full-time five days a week for 15 weeks. Closely supervised field experiences of all types with a wide variety of students. Emphasis on planning lessons and organizing materials, teaching methodologies, motivation, and student assessment. Topics addressed include communication and the arts, technology in learning, interdisciplinary learning, collaborative learning and teaching, creating a supportive environment, and professional development. Development of skills needed for self-assessment as well as student assessment. Clinical/Field experiences (all ages) required. Recommended preparation: Concurrent enrollment in MUED 396B. Offered as MUED 396A and MUED 496A. Counts as SAGES Senior Capstone. Prereq: EDUC 255 and MUAP 323 and MUAP 35.

MUED 396B. Student Teaching Seminar in Music Education. 3 Units.
This is the SAGES Senior Capstone requirement for students majoring in Music Education. Taken at the same time as the student teaching experience (MUED 396A/496A), this seminar will guide students through preparation for entering the professional world of music education, and mentor them in their preparation of their Senior Capstone Project and Presentation. Recommended preparation: Concurrent enrollment in MUED 496A. Offered as MUED 396B and MUED 496B. Counts as SAGES Senior Capstone.

MUED 399. Undergraduate Independent Studies. 1 - 3 Unit.
Each student develops a topic of interest to be explored with a faculty member.

MUED 400. Clinical/Field Experience. 3 Units.
This provides clinical/field experiences with all ages of students in all teaching areas. Students from a variety of socioeconomic and cultural backgrounds are encountered. Clinical/Field experiences (all ages) required.

The role of a Music Educator is complex and involves the practical application of music content in various Pre-K-12 teaching environments. This course is designed for entering Master of Arts with Teaching License majors who have a performance-based undergraduate education to give a comprehensive overview of the profession and facilitate the journey and transition from music student to professional music educator. Prereq: Admission into the Master of Arts with Teacher License Music Education Program.

MUED 420. Technology Assisted Music Teaching and Learning. 3 Units.
Fundamental concepts and skills for using technology in music teaching and learning. This project-oriented class will develop knowledge and competencies related to electronic musical instruments, MIDI sequencing, music notation software, computer-assisted instruction, digital media, the Internet, information processing, computer systems, and lab management as they relate to music education in K-12 schools. Recommended preparation: MUED 240. Offered as MUED 320 and MUED 420.

MUED 440. Scholarship in Music Education. 3 Units.
In MUED 440 we will be examining critically the research of others. We will explore the various paradigms and methods in music education research and will learn to become educated consumers of published research. In addition, we will be learning the beginnings of how to conduct our own research. Specific topics of this course include utilizing music education research tools, resources, and materials; identifying and generating research problems; reviewing related literature; designing research procedures; conducting quantitative and qualitative research studies; and writing empirical research reports and proposals. Writing skills are an important part of this course, for unless one can convey the findings of his or her research to other people with clarity, that research will be of limited value. Prereq: Graduate Student in Music Education.

MUED 441. Philosophical Foundations of Music Education. 3 Units.
In this course, students explore major aesthetic philosophies that have influenced contemporary music education, and discuss current issues central to our field. Among topics included: basic views about art/music; creating art/music; meaning in art/music, experiencing art/music; music and aesthetic education; criticism in music; multicultural music; and critical theories and inquiry regarding music education. Students are asked to assess their own roles in music education, as well as their obligations and potential capacities for leadership in the profession. Students will work toward development of a personal professional philosophy of music education.

MUED 442. Curriculum and Assessment in Music Education. 3 Units.
This course is designed to give graduate music education students thorough knowledge of the overarching role of curriculum and assessment as the organizational elements of instruction. In depth coverage of such topics as: the role of assessment and measurement in teaching; epistemology; scope and sequence; backward design; instructional goals; validity; reliability; performance assessments; measuring assessment; curriculum design; and teaching for understanding. These concepts and procedures will be explored in depth to give daily music instruction a global framework in the larger organizational structure of profession, state, national, and accreditation standards for P-12 and college music settings.
MUED 443. Music Cognition and Learning. 3 Units.
Survey and critical review of the literature as it relates to music teaching and learning, and music performance. Specific topics may include basic psychoacoustical processes, auditory perception, cognitive organization of musical sound, tonal and musical memory, neuromusical research, affective and physiological responses to music, learning theory, musical aptitude, developmental processes, and motivation.

MUED 444. Research in Music Education. 3 Units.
Paradigms and methods in music education research. Specific topics and assignments include research-related resources, tools and materials; research problems; research literature; research procedures, research proposals; qualitative and quantitative research studies; computer-assisted data analysis; and empirical research reports.

MUED 446. Sociology of Music Education. 3 Units.
In this course, students explore philosophical, social, cultural, and theoretical issues regularly encountered by music educators in classroom and rehearsal settings. Topics covered include: local, state, and national issues and policies intersecting with music education; social challenges and classroom realities facing music educators; social and cultural diversity issues in music education; and the role(s) of music education in society. Recommended preparation: MUED 444, Research in Music Education.

MUED 447. Seminar in College Music Teaching. 3 Units.
Seminar in College Music Teaching is a course to help prepare CWRU and CIM music graduate students for careers in university teaching. This course includes information on creating class syllabi, assessing students, interviewing for college jobs, and understanding the university ecosystem. Coursework will be tailored to meet the needs and goals of each graduate student, regardless of content area. Perspectives will be drawn from music education, applied music, musicology, conducting, music theory, and music technology. Prereq: Graduate music student at CWRU and CIM.

MUED 491. Music in Early Childhood. 3 Units.
The goal of the course is to provide students with an understanding of the role of music in early childhood and approaches to music education with young children. Students will experience an overview of selected theories of musical development of young children, discuss the importance of music to various areas of child development, explore cultural perspectives and influences on musical development, develop curricular materials and methods used in early childhood music education, observe children's music making in early childhood classrooms, and develop teaching skills for early childhood music settings. Topics and content of this course include: music's role in early childhood development; music aptitude and its measurement; theories of early childhood music learning; early childhood making; evaluating curricular materials for early childhood music; the importance of play in early childhood musical development; incorporating State and National Music Education Standards; designing instruction for early childhood music settings; assessment in early childhood music; cultural perspectives on music in early childhood; cultural influences on musical development; music therapy with young children; benefits of family interaction in music; the role of listening in early childhood musical development; and formal music instruction with young children. The class will participate in a weekly service learning project providing music instruction for young children and parents or caregivers from an underserved population. Offered as MUED 391 and MUED 491.

MUED 496A. Student Teaching in Music Education. 9 Units.
Teaching music in both elementary and secondary schools, full-time five days a week for 15 weeks. Closely supervised field experiences of all types with a wide variety of students. Emphasis on planning lessons and organizing materials, teaching methodologies, motivation, and student assessment. Topics addressed include communications and the arts, technology in learning, interdisciplinary learning, collaborative learning and teaching, creating a supportive environment, and professional development. Development of skills needed for self-assessment as well as student assessment. Clinical/Field experiences (all ages) required. Recommended preparation: Concurrent enrollment in MUED 396B. Offered as MUED 396A and MUED 496A. Counts as SAGES Senior Capstone. Prereq: EDUC 255.

MUED 496B. Student Teaching Seminar in Music Education. 3 Units.
This is the SAGES Senior Capstone requirement for students majoring in Music Education. Taken at the same time as the student teaching experience (MUED 396A/496A), this seminar will guide students through preparation for entering the professional world of music education, and mentor them in their preparation of their Senior Capstone Project and Presentation. Recommended preparation: Concurrent enrollment in MUED 496A. Offered as MUED 396B and MUED 496B. Counts as SAGES Senior Capstone.

MUED 501. Special Reading (M.A. and M.M.). 1 - 18 Unit.

MUED 544. Advanced Research in Music Education. 3 Units.
Advanced studies in models and methods of music education research. Research projects using data analysis. In-depth examination of selected quantitative and/or qualitative research designs according to student interests. Discussion of thesis and dissertation proposal format process. Recommended preparation: MUED 444.

MUED 591. Music Education Seminar in Conducting. 3 Units.
In this course, students focus on advanced score study, preparation, and analysis. In-depth conducting techniques on contemporary music and mixed meter compositions, along with the development of a comprehensive conducting bibliography are the major components in this seminar. Historical research, analytical evaluation, and the practical elements of the physical techniques required for one to conduct a chosen composition are all addressed for each composition studies. Seminar discussions include aesthetic and philosophical ideologies, and the practical issues a conductor faces when put in control of the advanced ensemble.


MUED 641. Quantitative Research Methods in Music Education. 3 Units.
Effective educators of all levels are expected to continually refine their knowledge of how students best learn music in practical applications through assimilation of current research. Implementation of research findings in one's classroom, as well as contributions back to the profession through scholarship, should remain a priority. Quantitative Research Methods will explore fundamentals of research design and appropriate statistical methods for interpretation of data. Specific topics will include: identification of research issues, selection of appropriate experimental designs for investigation, application of statistical methods for data interpretation, and evaluation of available research. Effective and efficient skills in writing and presentation will be expected and reinforced in all course activities. Prereq: MUED 440.


MUED 696. College Teaching Practicum. 0 Units.
MUED 701. Dissertation Ph.D.. 1 - 9 Unit.
Prereq: Predoctoral research consent or advanced to Ph.D. candidacy milestone.

MUEN Courses

MUEN 324. Case Percussion Ensemble. 0 - 2 Units.
The Case Percussion Ensemble is open to all interested Case-affiliated individuals who seek to continue their musical development by performing percussion ensemble literature. Membership is contingent on an audition that demonstrates moderate percussion ability and the ability to read music. Audition materials can be acquired through the director. Recommended preparation: Audition required.

MUEN 355. Miscellaneous Ensembles. 0 - 2 Units.

MUEN 356. University Circle Wind Ensemble. 1 Unit.
Designed for the most advanced woodwind, brass, and percussion players. Stresses the single-performance concept utilizing only players needed for a given piece. Audition required.

MUEN 365. Case Chamber Music. 0 - 1 Units.
This course will utilize wind instruments in different combinations, performing chamber music dating from the Renaissance to the 21st Century. The creation of new works and the adaptations of other repertoire will also be encouraged for unique/non-standard instrumentations. All combinations of Woodwinds, Brass, Voice, Strings, Guitar, Harp, Percussion, and Keyboard instruments will be considered; repertoire will be determined by available instrumentation. Membership is contingent on an audition that demonstrates moderate proficiency and the ability to read music. Audition materials can be acquired through the director.

MUEN 370. Popular Music Ensemble. 0 - 1 Units.
The Popular Music Ensemble at Case Western rehearses and performs a wide range of non-jazz popular music styles. Repertoire is usually suggested by students and chosen in collaboration with the instructor. Current popular music of the United States has tended to be favored, but the ensemble has also worked on music that originated as much as several decades ago. The group’s instrumentation is typically drums, bass, guitars, keyboard, and a number of vocalists. Occasionally original material is brought into the repertoire.

MUEN 373. Jazz Ensemble I. 0 - 1 Units.
Recommended preparation: Audition required.

MUEN 374. Jazz Ensemble II. 0 - 1 Units.

MUEN 382. Case Concert Choir. 0 - 1 Units.
This select choral group performs a wide variety of a cappella and accompanied choral works. Membership is gained only through an audition with the director. Recommended preparation: Audition required.

MUEN 383. Symphonic Winds. 0 - 1 Units.
Performance of advanced symphonic band repertoire. Open to all Case students, faculty and staff. Audition required for part placement only.

MUEN 384. Spartan Marching Band. 0 - 1 Units.

MUEN 385. Case/University Circle Orchestra. 0 - 1 Units.
The orchestra is comprised of Case students, faculty, staff and community players who play strings, woodwinds, brass and percussion. Recommended preparation: Audition required.

MUEN 386. Case Camerata Chamber Orchestra. 0 - 1 Units.
This chamber string ensemble is open to all interested Case affiliated individuals who seek to continue their music development by performing orchestral literature. Each person is required to audition to determine initial placement, section assignment, and seating. All members are required to perform a minimum of 2 concerts per academic year. Recommended preparation: Audition required.

MUEN 387. University Singers. 0 - 1 Units.
Chorus performing a wide variety of traditional and popular choral works. Open to all Case students. No audition required.

MUEN 389. Keyboard Ensemble. 0 - 1 Units.
Keyboard Ensemble is designed for music majors whose primary instrument is piano. The format involves coaching of in-class performances of solo literature, piano duets, and collaborative piano genres by enrolled students, as well as written and spoken presentations focusing on keyboard history, literature, and performance critique. The course meets once per week. It is highly recommended that students be concurrently enrolled in applied lessons. Non-majors who are pianists and majors whose primary instrument is not piano may enroll with instructor permission following a successful audition.

MUEN 393. Baroque Chamber Ensembles. 0 - 1 Units.
Designed for students interested in exploring baroque music in a chamber setting on historical instruments. Prereq: Audition required.

MUEN 394. Baroque Dance Ensemble. 0 - 1 Units.
This course allows musicians and dancers alike to explore historical dance steps and notation. History of dance and its relationships to music will be emphasized as students learn and perform historical dances. Prereq: MUHI 342 or MUHI 442 or permission of Instructor.

MUEN 395. Collegium Musicum. 0 - 1 Units.
Recommended preparation: Audition required.

MUEN 396. Early Music Singers. 0 - 1 Units.
Recommended preparation: Audition required.

MUEN 397. Baroque Orchestra. 0 - 1 Units.
Recommended preparation: Audition required.

MUEN 398. Cleveland Orchestra Chorus. 0 - 1 Units.
Recommended preparation: Audition required.

MUGN Courses

MUGN 201. Introduction to Music: Listening Experience I. 3 Units.
A flexible approach to the study of the materials and literature of music. Aural and analytical skills primarily for classical music.

MUGN 202. Introduction to Music: Listening Experience II. 3 Units.
Application of the skills developed in MUGN 201 to the understanding of historical and stylistic content of Western music. Focus is on particular works in context of the era of composition. Recommended preparation: MUGN 201 or consent of department.

MUGN 212. History of Rock and Roll. 3 Units.
This course surveys the musical practices of the rock and roll era, broadly defined to include much popular music since the 1950s. Music majors are to enroll in MUHI 312. Prereq: For Non-Music Majors only.

MUGN 215. History and Styles of Jazz. 3 Units.
Musical styles and structures of jazz and American popular music since 1900. Recommended preparation: MUGN 201.
MUGN 250. Topics in Music for non-majors. 3 Units.
Close study of a theme, a work, or aspect of music such as “Music and Gender”, “Music in Vienna”, or “Instruments of Music.” The course is intended as an exploration of diverse aspects of music in society, both historical and modern, and is primarily for non-majors as a follow-up to MUGN 201 or 202.

MUGN 308. Digital Music: Composition and Production. 3 Units.
Course focuses on digital music creation and composition using audio sequencing software. Topics include song writing, synthesizers, recording, editing, mixing, and film scoring. Course is open to music majors, minors, and non-majors with sufficient musical background. Emphasis on group work, creativity, and imagination. All work done on Macintosh computers in The Core, the Department of Music’s multimedia classroom.

MUGN 309. Audio Production in Pro Tools. 3 Units.
Audio Production in Pro Tools. Practical training in contemporary audio production methods using the industry standard software, Pro Tools. Also covers the use of Pro Tools for musical analysis and evaluation of music copyright issues.

MUGN 399. Undergraduate Independent Studies. 1 - 3 Unit.
Each student develops a topic of interest to be explored with a faculty member.

MUGN 501. Special Reading (M.A. and M.M.). 1 - 18 Unit.
MUGN 751. Recital Document I-D.M.A.. 1 - 3 Unit.
MUGN 752. Recital Document II - D.M.A.. 1 - 3 Unit.

MUHI Courses

MUHI 201. History of Western Music I. 3 Units.
A survey of Western music from the earliest notations to c1800. Prereq: MUTH 102 or MUTH 104 or MUTH 108.

MUHI 202. History of Western Music II. 3 Units.
A survey of Western music from c1800 to the present. Prereq: MUHI 201.

MUHI 301. History of Western Music I. 3 Units.
Developments in Western music from early Christian times to c1700. Prereq: MUTH 102 or MUTH 104 or (Prereq or Coreq) MUTH 108.

MUHI 302. History of Western Music II. 3 Units.
Developments in Western music from c1700 to c1900. Prereq: MUTH 102 or MUTH 104 or MUTH 108.

MUHI 303. History of Western Music III. 3 Units.
Music of the twentieth century, covering history, analysis, and aesthetic issues. Prereq: MUTH 102 or MUTH 104 or MUTH 108, MUHI 301 or MUHI 302.

MUHI 310. Music Cultures of the World: Music of Asia and Africa. 3 Units.
A one-semester introduction to musics of Asia and Africa, focusing on the relationship of musical traditions and practices to culture and society. Recommended preparation: MUTH 106.

MUHI 312. History and Analysis of Rock and Roll. 3 Units.
This course surveys American popular song from the 1890s to the present, with an emphasis on rock ‘n’ roll and pop music of the last sixty years. The relationship of popular song to important currents in American life and culture will be examined. The origins of various styles of song in the cultures of different ethnic and national groups will be discussed, along with the subsequent diffusion and transformation of such music through mass mediation. The characteristics and meanings of music, lyrics, and images will be discussed with the aid of sound recordings, video and films. Students taking this course may not receive credit for MUPM 212. Prereq: For Music Majors only.

MUHI 313. American Popular Song to 1950. 3 Units.
Survey of popular music practices from the nineteenth century until the emergence of rock and roll.

MUHI 314. Blues Histories and Cultures. 3 Units.
An investigation of the blues as a musical and lyrical form as well as a set of social and cultural practices. Beginning in the Mississippi Delta with the country blues, the course moves roughly chronologically, looking at classic and urban blues, the role of blues language and culture during the Harlem Renaissance, and their ‘revival’ in Britain in the 1960s. Our aim will be to open up questions surrounding blues transformations and black authenticities, the relationship between blues cultures and the rise of modernism, the racial and sexual coding of both black and white blues, and the ways in which blues sounds and aesthetics have permeated American popular music since the 1920s. Counts as SAGES Departmental Seminar.

MUHI 315. History of Jazz and American Popular Music. 3 Units.
Musical styles and structures of jazz and American popular music; emphasis on music since 1900. Recommended preparation: MUTH 202 or MUHI 302.

MUHI 320. Global Pop. 3 Units.
Exploration of popular music practices, particularly rock, pop, and hip hop, outside the United States.

MUHI 326. The Holocaust and the Arts. 3 Units.
This course explores artistic output during the Holocaust, as well as responses to the Holocaust in various forms, including music, art, architecture, film, and literature. Offered as MUHI 326, JDST 326, HSTY 326 and RLGN 326.

MUHI 341. Introduction to Historical Performance Practice. 3 Units.
Summary and perspective of the problems and issues associated with the field of historical performance practices. Offered as MUHI 341 and MUHI 441. Prereq: MUHI 301 and MUHI 302.

MUHI 342. Seminar in Historical Performance Practice. 3 Units.
Seminar in a specific instrument and/or vocal area of historical performance practices, such as baroque vocal, instrumental, or keyboard practices. May be repeated because topics vary. Offered as MUHI 342 and MUHI 442. Prereq: MUHI 341 or MUHI 441.

MUHI 350. Topics in Music History. 3 Units.
Close study of a theme or aspect of music such as “Music and Gender,” “Symphonies of Mahler,” and “Wagner’s Ring.” Offered as MUHI 350 and MUHI 450.

MUHI 390. Undergraduate Seminar in Music History. 3 Units.
An intensive research seminar in music history for music majors. Counts as SAGES Departmental Seminar.
MUHI 395A. Capstone for Music Majors A. 1 Unit.
Not required for the music major, but intended for music majors in concentrations other than Audio Recording who choose to complete a capstone project in music. Course consists of projects varying according to the students’ area of study and interests, but each must include a document of appropriate length and scope and must be presented publicly in an appropriate forum. MUHI 395A guides students through the preliminary stages of the project and preparation of a formal Capstone proposal. Counts as SAGES Senior Capstone. Prereq: Successful completion of two of the following courses: MUHI 301, MUHI 302 or MUHI 303; and successful completion of SAGES Writing Portfolio.

MUHI 395B. Capstone for Music Majors B. 2 - 5 Units.
Not required for the music major, but intended for music majors in concentrations other than Audio Recording who choose to complete a capstone project in music. Course consists of projects varying according to students’ area of study and interests, but each must include a document of appropriate length and scope and must be presented publicly in an appropriate forum. MUHI 395B guides students through completion of the project, including the document and public presentation. Counts as SAGES Senior Capstone. Prereq: Successful completion of MUHI 395A.

MUHI 399. Undergraduate Independent Studies. 1 - 3 Unit.
Each student develops a topic of interest to be explored with a faculty member.

MUHI 401. Methodologies of Music History. 3 Units.
Introduction to the scholarly study of music, including principles of music bibliography, techniques of library research, and evaluation of editions. Special emphasis given to the relationship between musical performance and research in the history and criticism of music. Attention will also be given to design of program notes and essays. Required of first-year students in the Master of Music degree program.

MUHI 430. Music History for Educators. 3 Units.
Examines the intersections of composers’ musical output as it overlaps with theories of general education, music education, and pedagogy.

MUHI 431. Medieval Music: Early Christian to 1425. 3 Units.
The mass, liturgical drama, and early polyphony through the Ars Nova.

MUHI 432. Music of the Renaissance. 3 Units.
Vocal polyphonic music from the Burgundian school through the Elizabethan madrigal.

MUHI 433. Music of the Baroque. 3 Units.
Musical developments from Monteverdi to Bach and Handel.

MUHI 434. Viennese Classicism. 3 Units.
Development of the symphony, concerto, chamber music, and opera in the works of the Mannheim composers, Haydn, Mozart, and Beethoven.

MUHI 435. Nineteenth Century Music. 3 Units.
Romanticism and other 19th century trends in music up to impressionism.

MUHI 436. Twentieth Century Music. 3 Units.
Critical and analytical study of music since 1900. Examination and discussion of stylistic characteristics and aesthetic aims of contemporary composers.

MUHI 437. Popular Music Studies. 3 Units.
Introduction to the interdisciplinary field of popular music studies, with emphasis on musicological approaches. Analysis of musical signification within the complex cultural contexts shaped by place, history, commerce, and technology.

MUHI 438. Music and Gender. 3 Units.
Introduction to the interdisciplinary field of popular music studies, with special emphasis on musicological approaches. Analysis of musical signification within the complex cultural contexts shaped by place, history, commerce, and technology.

MUHI 439. Music and Gender. 3 Units.
Introduction to the interdisciplinary field of popular music studies, with special emphasis on musicological approaches. Analysis of musical signification within the complex cultural contexts shaped by place, history, commerce, and technology.

MUHI 441. Introduction to Historical Performance Practice. 3 Units.
Summary and perspective of the problems and issues associated with the field of historical performance practices. Offered as MUHI 341 and MUHI 441.

MUHI 442. Seminar in Historical Performance Practice. 3 Units.
Seminar in a specific instrument and/or vocal area of historical performance practices, such as baroque vocal, instrumental, or keyboard practices. May be repeated because topics vary. Offered as MUHI 342 and MUHI 442. Prereq: MUHI 341 or MUHI 441

MUHI 443. Medieval/Renaissance Notation. 3 Units.
Theory of chant, modal, mensural, and tablature notations. Practice in making literal transcriptions, editing, and preparing scores for performances.

MUHI 450. Topics in Music History. 3 Units.
Close study of a theme or aspect of music such as “Music and Gender,” “Symphonies of Mahler,” and “Wagner’s Ring.” Offered as MUHI 350 and MUHI 450.

MUHI 501. Special Reading (M.A. and M.M.). 1 - 18 Unit.

MUHI 590. Seminar in Musicology. 3 Units.
Problems in musical criticism, aesthetics, and analysis, as well as interdisciplinary methodologies.


MUHI 610. Bibliography and Research Methods in Music. 3 Units.
Seminar in research methods and techniques, stressing the analytic and functional approaches to bibliography.

MUHI 611. Doctor of Musical Arts Seminar. 3 Units.
Recommended preparation: MUHI 610.

MUHI 612. Analysis for Music Historians. 3 Units.
This seminar will be required of all first-year graduate students in Musicology and Historical Performance Practices. It seeks to develop the analytical skills of music historians, deepening their earlier technical training and teaching them how to approach repertories (music before 1700, after 1900, popular music) they are unlikely to have studied in depth previously. In contrast to the instruction offered at CIM, this seminar will present a range of ways in which to bridge between the details of a musical composition and the historical context within which it first appeared. The seminar deals with five case studies, one representative of each of the following repertories: Before 1700 (e.g., Josquin motets, Monteverdi madrigals, Frescobaldi toccatas) 1700-1820 (e.g., Rameau keyboard suites, Beethoven sonatas, Schubert string quartets) 1820-1910 (e.g., Berlioz Symphonie Fantastique, Brahms symphonies, Mahler songs) After 1910 (e.g., Stravinsky Sacre du Printemps, Webern Symphony, Ruth Crawford Seeger String Quartet, Ligeti Etudes) Popular Music (e.g. 12-bar blues, “rhythm changes,” “Round Midnights”) Of these, most students will have received training only in the analysis of music 1700-1820, and that training will have concentrated strictly on harmony and structure, without engagement with cultural context. Each unit of this seminar will proceed from basic grammatical norms for the repertory in question to formal criticism to cultural interpretation.

MUHI 699. Qualifying Exam Practicum. 0 Units.
This class is meant to guide students as they prepare their bibliographies and works lists (if applicable) for their qualifying exams. We will discuss how best to address the broad topics they have chosen for their exams, and the manner in which they can begin to focus their research to an achievable list, one that they will craft with input from their exam committee. Beginning with the key works in their areas, they will be shown how best to expand the list to include current literature, and how to prioritize what should and should not be on the list.

MUHI 701. Dissertation Ph.D.. 1 - 9 Unit.
Prereq: Predoctoral research consent or advanced to Ph.D. candidacy milestone.

MUHI 710. Dissertation Seminar. 0 Units.
This class is meant to give students a place to deal with writing their dissertation: discussion, critique, complaints, and questions are all an accepted and expected part of the process. Once during the semester students will provide the group with a chapter (or part of a chapter, or conference paper), which they will read. The group will discuss the work as a group, giving everyone a chance to provide suggestions, corrections, and other forms of critique. Everyone will get a chance to present their own work and will get many chances to read the work of others. Exposure to different topics and writing styles will not only broaden students’ approach to their own work, but will also prepare them for the multiplicity of research and writing styles they’ll face on the job market and in the academy.

MUHI 751. Recital Document I-D.M.A.. 1 - 3 Unit.
MUHI 752. Recital Document II - D.M.A.. 1 - 3 Unit.
MUHI 753. Recital Document III-D.M.A.. 1 - 6 Unit.

MUTH Courses

MUTH 101. Harmony-Keyboard I. 2 Units.
Scales, intervals, triads, seventh chords, and their inversions. Harmonization of melodies and basses, chorale study, modulation, analysis. Creative use of material. Correlated and taken concurrently with MUTH 105 and 106. Both aspects of the course must be passed in order to complete requirements.

MUTH 102. Harmony-Keyboard II. 2 Units.
(See MUTH 101.)

MUTH 103. Theory I. 3 Units.
Music theory for the nonmusic major. Intervals, scales, rhythmic drill, sight singing, eartraining, keyboard work, and harmony through inversions of triads and seventh chords. Not open to music majors.

MUTH 104. Theory II. 3 Units.
(See MUTH 103.) Recommended preparation: MUTH 103 or consent of department.

MUTH 107. Theory for Music Majors I. 4 Units.
This course is the first of four semesters of music theory requirements for Case music majors. It will include the study of harmony, analysis, eartraining, and keyboard skills. Recommended preparation: Placement exam through department.

MUTH 108. Theory for Music Majors II. 4 Units.
This course is the second of four semesters of music theory for Case music majors. It includes further study of harmony, analysis, eartraining, sight singing, and keyboard. Recommended preparation: MUTH 107 or placement exam through department.

MUTH 201. Harmony-Keyboard III. 2 Units.
Continuation of MUTH 101 and 102. Chromatically altered triads and 7th chords; 9th, 11th, 13th. Neapolitan and augmented 6th chords, regular and irregular solutions. Correlated and taken concurrently with MUTH 205 and 206. Both aspects of the course must be passed in order to complete requirements. Students cannot earn credit for both MUTH 201/205 and MUTH 207. Recommended preparation: MUTH 102 or placement examination.

MUTH 202. Harmony-Keyboard IV. 4 Units.
(See MUTH 201.) Recommended preparation: MUTH 102 or placement examination.

MUTH 207. Theory for Music Majors III. 4 Units.
This course is the third of four semesters of music theory for music majors. Continued study of harmony, analysis, eartraining, sightsinging, and keyboard, including use of dissonance and chromaticism, diatonic modulation. Students cannot earn credit for both MUTH 201/205 and MUTH 207. Recommended preparation: MUTH 108 or placement exam through department.

MUTH 208. Theory for Music Majors IV. 4 Units.
This course is the fourth of four semesters of music theory for CWRU music majors. Continued study of harmony, analysis, ear-training, sight-singing, and keyboard. Use of dissonance and chromaticism, chromatic voice leading technique, tonal and post-tonal topics. Recommended preparation: MUTH 207 or placement exam through department.

MUTH 311. 16th Century Counterpoint. 2 Units.
Sixteenth century modal counterpoint. Exercises in the five species. Writing of short compositions and motets in two, three and four voices. Recommended preparation: MUTH 202 or MUTH 206.

MUTH 312. Eighteenth Century Counterpoint. 3 Units.
Analysis and writing of inventions in two parts, and fugues in three and four parts. Recommended preparation: MUTH 202 or MUTH 206.

MUTH 319. Jazz Skills. 3 Units.
This class is designed to teach students basic skills in jazz improvisation, jazz keyboard, arranging/composition and pedagogy. Basic theory is required. Students will eventually arrange their own composition for big band, which will feature them as the improvising soloist. Prereq: (MUTH 102 and MUTH 106) or MUTH 108 or permission of instructor.

MUTH 320. Form and Analysis. 3 Units.
Aural and visual analysis of structural and stylistic features of 16th through 20th century music. Prereq: MUTH 202 and MUTH 206, or MUTH 208.

MUTH 399. Undergraduate Independent Studies. 1 - 3 Unit.
Each student develops a topic of interest to be explored with a faculty member.

MUTH 400A. Review of Musical Structure. 3 Units.
Instruction of fundamentals of form, counterpoint, and four-part harmony. Designed for graduate students; credit not applicable toward degree requirements.

MUTH 400B. Sightsinging and Eartraining Review. 2 Units.
Background in fundamentals of sight singing in four clefs; melodic and harmonic dictation including chromatic harmony and modulation. Designed for graduate students; credit not applicable toward degree requirements.

MUTH 416. Pre-common Practice Theory and Analysis. 3 Units.
An exploration of treatises and analytical methods appropriate to music of the Medieval and Renaissance eras.
MUTH 422. Musical Analysis for Educators. 3 Units.
Musical Analysis for Educators is designed to strengthen the analysis skills of music educators and explore practical application of these skills. Recommended preparation: Placement exam.

MUTH 424. Introduction to Schenkerian Analysis. 3 Units.

MUTH 461. Theory Pedagogy. 3 Units.
Principles of the teaching of theory at all levels, with examination and appraisal of teaching methods, textbooks, recent concepts, etc.

MUTH 495. Seminar in Music Theory. 3 Units.

Astronomy
One of the following sequences: 6
- ASTR 201 The Sun and its Planets (& Any other 200-level ASTR course)
- ASTR 221 Stars and Planets
  & ASTR 222 Galaxies and Cosmology

Total Units 6

Biology
Two of the following sequences: 8
- BIOL 214 Genes, Evolution and Ecology
  & 214L Genes, Evolution and Ecology Lab
- BIOL 215 Cells and Proteins
  & 215L Cells and Proteins Laboratory
- BIOL 216 Development and Physiology
  & 216L Development and Physiology Lab

Total Units 8

Chemistry
One of the following sequences: 8-10
- CHEM 105 Principles of Chemistry I
  & CHEM 106 and Principles of Chemistry II
  & CHEM 113 and Principles of Chemistry Laboratory
- CHEM 111 Principles of Chemistry for Engineers
  & CHEM 113 and Principles of Chemistry Laboratory
  & ENGR 145 and Chemistry of Materials

Total Units 8-10

Earth, Environmental, and Planetary Sciences
One of the following: 3
- EEPS 101 The Earth and Planets
- EEPS 110 Physical Geology
- EEPS 115 Introduction to Oceanography
- EEPS 117 Weather and Climate
- EEPS 119 Geology Laboratory
- One additional EEPS course

Total Units 3

Mathematics
One of the following sequences: 8
- MATH 125 Math and Calculus Applications for Life,
  & MATH 126 Managerial, and Social Sci I
  and Math and Calculus Applications for Life,
  Managerial, and Social Sci II
- MATH 121 Calculus for Science and Engineering I
  & MATH 122 Calculus for Science and Engineering II

Total Units 8

Physics
One of the following sequences: 8-11
- PHYS 115 Introductory Physics I
  & PHYS 116 and Introductory Physics II

Natural Sciences Program
The natural sciences major is an interdepartmental science program that leads to the Bachelor of Arts (BA) degree. It is intended to serve students whose interests and objectives call for a major in the humanities or social sciences (e.g., the major in history and philosophy of science) that is best accompanied by a broad background in the natural sciences.

Undergraduate Programs
Major
Natural sciences is available as a second major for the BA; the first major must be in a department or program within the arts, humanities, or social sciences, excluding the programs in American Studies, Environmental Studies, Gerontological Studies, and Pre-Architecture. For a student who completes a BS degree in management or accounting, natural sciences may serve as the sole major for the BA degree.

The program requires a minimum of 50 semester hours of work in natural sciences and mathematics. The departments included in the major are astronomy; biology; chemistry; earth, environmental, and planetary sciences; and physics. The student must complete a minimum of 20 hours in one of these departments, a minimum of 8 hours each in two of the other departments, and 3 hours each in the remaining two departments. In addition, all natural sciences majors must complete:

<table>
<thead>
<tr>
<th>One of the following sequences:</th>
<th>6</th>
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<tbody>
<tr>
<td>MATH 125 &amp; MATH 126</td>
<td>Math and Calculus Applications for Life, Managerial, and Social Sci I</td>
</tr>
<tr>
<td>&amp; MATH 121 &amp; MATH 122</td>
<td>Calculus for Science and Engineering I</td>
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</tbody>
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Total Units 6

The courses used to satisfy the natural sciences major should be courses that would satisfy requirements of an existing science major. However, any 200-level or higher astronomy course is acceptable for the natural sciences major.

Minor
A minor is achieved through completion of the requirements listed below in any four of the six participating departments.
Nutrition

The College of Arts and Sciences awards the Bachelor of Arts and Bachelor of Science degrees in nutrition and nutritional biochemistry and metabolism. The required courses for the majors and minor are offered by the Department of Nutrition in the School of Medicine. For details about the department’s undergraduate programs, please consult the Department of Nutrition (http://bulletin.case.edu/schoolofmedicine/nutrition/#undergraduatetext) section of this bulletin.

Department of Philosophy

The Department of Philosophy offers an undergraduate major leading to the Bachelor of Arts degree. It also offers minor programs for undergraduates as well as graduate-level courses for candidates for the Master of Arts degree in such fields as biomedical ethics, history, English, mathematics, and the sciences.

The department’s course offerings are designed not only to provide knowledge and skills required for students whose main interest is in philosophy, but also to educate students in general about the intellectual issues that a reflective person is likely to encounter in various contexts of civilized life. The department emphasizes the relevance of philosophy to mathematics, computer science, the natural sciences, the social sciences, the humanities and arts, and law.

The major program in philosophy, besides offering a solid foundation for advanced study in philosophy and enriching programs in other disciplines, develops the skills for analytical and critical thinking, effective communication, and rational decision making needed in a wide range of endeavors. The program thus provides majors with unusual flexibility in the choice of subsequent careers, including law, medicine, and management, while complementing the pursuit of career objectives with a greater perspective and a richer quality of intellectual life.

In collaboration with the Department of History, the department participates in an interdisciplinary major in the History and Philosophy of Science Program (p. 184), leading to the Bachelor of Arts degree. The department also participates in, and contributes courses to, the interdisciplinary minor in artificial intelligence.

Undergraduate Programs

Major

The major consists of 30 hours (ten 3-credit courses) in philosophy, including PHIL 101 Introduction to Philosophy, PHIL 201 Introduction to Logic, PHIL 201 Introduction to Logic, PHIL 301 Ancient Philosophy, PHIL 302 Modern Philosophy, and six other elective philosophy courses to be determined in consultation with the department’s undergraduate advisor. However, a student may request permission to take up to 6 hours (two 3-credit courses) of the required 18 hours of philosophy electives in another field or other fields. Such a request should be supported by considerations showing how the substitution(s) would strengthen the student’s major in philosophy. The advisor must approve the substitution(s) in advance.

Departmental Honors

The department offers an honors program for students pursuing a major in philosophy. Students in this program must complete a substantial thesis, pass an oral examination on the thesis, and maintain a B average in philosophy courses. To be eligible for admission, a student should have an overall grade point average of B or better, and a grade of B or better in each philosophy course already taken. A student normally should have taken at least four, and at most seven, philosophy courses at the time of application for admission. An honors student should register for PHIL 399 Directed Study to do honors work. Interested students should apply for admission to the program during the first semester of junior year.

Minor in Philosophy

The department offers a range of possible minor programs, each of which must include PHIL 101 Introduction to Philosophy and four other courses in philosophy at the 200 or 300 level (excluding PHIL 390 Senior Research Seminars in History and Philosophy of Science and PHIL 399 Directed Study), chosen to meet the specific needs of students majoring in other fields. The undergraduate advisor will assist students in devising minor programs.

Minor in Ethics

The minor in ethics allows undergraduate students in any field to pursue a concentration of studies in ethics from multiple perspectives: theoretical and practical, philosophical and empirical/interdisciplinary. The goal is to encourage analytical reflection on the principles and situations of ethical action, social, interpersonal, or individual, in historical and contemporary contexts. The ethics minor requires PHIL 101 Introduction to Philosophy, PHIL 205 Contemporary Moral Problems or PHIL 206 Contemporary Moral Issues: Experiential, PHIL 305 Ethics, one other PHIL course at the 200-300 level, and one of several identified courses in a field other than philosophy.

Required Courses

PHIL 101 Introduction to Philosophy 3
PHIL 205 Contemporary Moral Problems 3
or PHIL 206 Contemporary Moral Issues: Experiential
PHIL 305 Ethics 3

One philosophy course chosen in consultation with advisor.
PHIL 271  Bioethics: Dilemmas
PHIL 304  Science and Engineering Ethics
PHIL 330  Topics in Ethics
PHIL 315  Selected Topics in Philosophy
PHIL 317  War and Morality
PHIL 334  Political and Social Philosophy
PHIL 356  Comparative Philosophy
PHIL 399  Directed Study

One course from the following interdisciplinary list:
BETH 315  International Bioethics: Policy and Practice
RLGN 325  Justice, Religion, and Society
RLGN 330  Classical Jewish Religious Thought
RLGN 350  Jewish Ethics
COGS 272  Morality and Mind
COGS 305  Departmental Seminar: Moral Boundaries and Limits of Science
COGS 365  Advanced Topics in Cognitive Neuroscience
SOCI 349  Social Inequality

Philosophy Capstone

Students may fulfill their SAGES capstone requirement in philosophy by registering for PHIL 399 Directed Study after devising a suitable project in consultation with the undergraduate advisor and the supervising faculty member.

Department Faculty

Laura E. Hengehold, PhD
(Loyola University of Chicago)
Associate Professor and Chair
Political and social philosophy; philosophy of feminism; Foucault; contemporary continental philosophy

Jeremy Bendik-Keymer, PhD
(University of Chicago)
Elmer G. Beamer-Hubert H. Schneider Professor in Ethics; Associate Professor
Ethics and moral philosophy; environmental philosophy; philosophy of education; meta-philosophy; history of ethics and moral philosophy

Shannon D. French, PhD
(Brown University)
Inamori Professor of Ethics; Associate Professor
Military ethics; leadership ethics; professional ethics; moral psychology; biomedical and environmental ethics

Chris Haufe, PhD
(Columbia University)
Assistant Professor
Philosophy of science, philosophy of biology

Anthony Jack, PhD
(University College London, UK)
Associate Professor
Experimental psychology, extensive training in philosophy and neuroscience

Chin-Tai Kim, PhD
(Harvard University)
Professor
History of philosophy (17th, 18th, and 19th centuries); theory of knowledge; metaphysics; foundations of ethics; phenomenology; comparative philosophy

Colin McLarty, PhD
(Case Western Reserve University)
Truman P. Handy Professor of Philosophy
Logic; philosophy of logic; philosophy of mathematics; philosophy of science; contemporary French philosophy

Adjunct Faculty

Joel Levin, DPhil
(University of Oxford, U.K.)
Adjunct Associate Professor; Adjunct Professor, Case Western Reserve University School of Law
Philosophy of law; political philosophy; ethical theory

Secondary Faculty

Insoo Hyun, PhD
(Brown University)
Associate Professor, Department of Bioethics
Bioethics; moral and political philosophy

Deepak Sarma, PhD
(University of Chicago)
Professor, Department of Religious Studies
Hinduism; Indian philosophy; philosophy of religion; method and theory

Courses

PHIL 101. Introduction to Philosophy. 3 Units.
Basic problems of philosophy and methods of philosophical thinking. Problems raised by science, morality, religion, politics, and art. Readings from classical and contemporary philosophers. Normally given in multiple sections with different instructors and possibly with different texts. All sections share core materials in theory of knowledge, metaphysics, and ethics despite differences that may exist in emphasis.

PHIL 201. Introduction to Logic. 3 Units.

PHIL 203. Natural Philosophy I. 3 Units.
Historical and philosophical interpretation of some epochal events in development of science. Copernican revolution, Newtonian mechanics, Einstein's relativity physics, quantum mechanics, and evolutionary theory; patterns of scientific growth; structure of scientific “revolutions;” “science and "pseudo-science.” First half of a year-long sequence. Offered as HSTY 203 and PHIL 203.
PHIL 204. Natural Philosophy II. 3 Units.
Conceptual, methodological, and epistemological issues about science: concept formation, explanation, prediction, confirmation, theory construction and status of unobservables; metaphysical presuppositions and implications of science; semantics of scientific language; illustrations from special sciences. Second half of a year-long sequence. Offered as HSTY 207 and PHIL 204.

PHIL 205. Contemporary Moral Problems. 3 Units.
Examination of selected contemporary moral problems and contemporary faces of perennial moral problems such as: when, if ever, lying is justified; the value of honesty and of confidentiality; under what circumstances, if any, various types of killing (suicide, execution, in war, euthanasia, killing of lower animals or ecosystems) are justified. Additional moral problems raised by new knowledge (such as genetic information) or new technology (such as rights to digital information), and responsible uses of these and other sources of power. Clarification of the concepts of value, ethical evaluation and justification, ethical argument, moral relevance, and the notion of a moral problem itself. Readings will draw on classical and contemporary sources in philosophy.

PHIL 206. Contemporary Moral Issues: Experiential. 3 Units.
What is good and how is it different from evil? How do you know when you have done the right thing? Is there an absolute grounding to morality? What is the role of reason in our lives? What is human nature? Are human beings essentially creatures of emotion? What bearing do these questions have on our basic moral determinations of good and evil? How are all these questions related to concerns about personal identity? Using sources from different eras and schools of philosophical thought, students will become more informed about the intricacies involved in thinking clearly about these issues.

PHIL 211. Indian Philosophy. 3 Units.
A survey of Indian philosophical thought with emphasis on the Vedas, early Hindu, and Jain literature. Offered as PHIL 221 and RLGN 221.

PHIL 225. Evolution. 3 Units.
Multidisciplinary study of the course and processes of organic evolution provides a broad understanding of the evolution of structural and functional diversity, the relationships among organisms and their environments, and the phylogenetic relationships among major groups of organisms. Topics include the genetic basis of micro- and macro-evolutionary change, the concept of adaptation, natural selection, population dynamics, theories of species formation, principles of phylogenetic inference, biogeography, evolutionary rates, evolutionary convergence, homology, Darwinian medicine, and conceptual and philosophic issues in evolutionary theory. Offered as ANTH 225, BIOL 225, EEPS 225, HSTY 225, and PHIL 225.

PHIL 270. Introduction to Gender Studies. 3 Units.
This course introduces women and men students to the methods and concepts of gender studies, women's studies, and feminist theory. An interdisciplinary course, it covers approaches used in literary criticism, history, philosophy, political science, sociology, anthropology, psychology, film studies, cultural studies, art history, and religion. It is the required introductory course for students taking the women's and gender studies major. Offered as ENGL 270, HSTY 270, PHIL 270, RLGN 270, SOCI 201, and WGST 201. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

PHIL 271. Bioethics: Dilemmas. 3 Units.
We have the genetic technology to change nature and human nature, but should we? We have the medical technology to extend almost any human life, but is this always good? Should we clone humans? Should we allow doctor-assisted suicide for the terminally ill? This course invites students from all academic disciplines and fields to examine current and future issues in bioethics—e.g., theory and methods in bioethics; death and dying; organ transplantation; genetics; aging and dementia; fertility and reproduction; distributive justice in health care access. The course will include guest lecturers from nationally-known Bioethics faculty. Offered as BETH 271, PHIL 271.

PHIL 301. Ancient Philosophy. 3 Units.
Western philosophy from the early Greeks to the Skeptics. Emphasis on the pre-Socratics, Plato and Aristotle. Recommended preparation: PHIL 101 and consent of department. Offered as CLSC 301 and PHIL 301.

PHIL 302. Modern Philosophy. 3 Units.

PHIL 303. Topics in Philosophy of Science. 3 Units.
In-depth study of selected topics in general philosophy of science or philosophy of physical, biological, or social science. Topics may include: theories of explanation, prediction, and confirmation; semantics of scientific language; reductionism; space, time and relativity; philosophical issues about quantum mechanics; philosophical issues about life sciences (e.g., evolution, teleology, and functional explanation); explanation and understanding in social sciences; value in social science. Recommended preparation: PHIL 101 or PHIL 201 or PHIL 203. Offered as PHIL 303 and PHIL 403.

PHIL 304. Science and Engineering Ethics. 3 Units.
This course prepares students to recognize ethical problems that commonly arise in the scientific and engineering workplace, to understand ethical concepts, to evaluate ethical arguments, and to critically examine responses to problems and their ethical ramifications. It addresses questions such as: What are the criteria of fairness in crediting contributions to research? How safe is safe enough? What are professional responsibilities, and how do they change over time? What is research misconduct? When is ignorance culpable? What is intellectual property and what protections does it deserve? When is biological testing of workers justified? What are responsible ways of raising concerns, and what supports do good organizations give for raising them? What treatment counts as harassment or as an expression of prejudice? What are good means for controlling it? What are scientists' and engineers' responsibilities for environmental protection? What is a "conflict of interest" and how is it controlled? What protections for human research subjects are warranted? What, if any, use of animals in research is justified? Recommended preparation: PHIL 101 or PHIL 102 or PHIL 205. Offered as PHIL 304 and PHIL 404.

PHIL 305. Ethics. 3 Units.
Analysis of ethical theories and concepts of goodness, right, and obligation. Discussion of nature of justice, problem of justification of moral principles, and relation between facts and values. Recommended preparation: PHIL 101, PHIL 102 or PHIL 205. Offered as PHIL 305 and PHIL 405.
PHIL 306. Mathematical Logic and Model Theory. 3 Units.
Propositional calculus and quantification theory; consistency and completeness theorems; Gödel incompleteness results and their philosophical significance; introduction to basic concepts of model theory; problems of formulation of arguments in philosophy and the sciences. Offered as PHIL 306, MATH 406 and PHIL 406.

PHIL 313. Philosophy of Mathematics. 3 Units.
Logical paradoxes and their effects on foundations of mathematics. Status of mathematical entities and nature of mathematical truths. Formalist, logicist, and intuitionist positions. Recommended preparation: PHIL 101 or PHIL 201. Offered as PHIL 313 and PHIL 413.

PHIL 315. Selected Topics in Philosophy. 3 Units.
Examination of views of a major philosopher or philosophical school, a significant philosophical topic, or a topic that relates to philosophy and other discipline. Recommended preparation: PHIL 101. Offered as PHIL 315 and PHIL 415. Counts as SAGES Departmental Seminar.

PHIL 316. African Political Thought. 3 Units.
Introduction to select themes in the work of contemporary African philosophers, with special emphasis on political thought. In this course, students will learn something about factors affecting the creation and flow of knowledge and ideas about Africa and discuss the relative importance of the "nation-state" as an idea in Europe, pre-colonial Africa, and postcolonial Africa. Offered as PHIL 316/416 and ETHS 316/416. Prereq: PHIL 101.

PHIL 317. War and Morality. 3 Units.
The aim of this course is to explore a wide range of ethical issues relating to the decision to take a nation to war, how wars are conducted, and efforts to establish order in the wake of a conflict. Topics include the Just War tradition, pacifism, humanitarian intervention, moral repair and the establishment of a just peace, conduct of war, warrior codes, warrior transitions, and civil-military relations. We will be examining the ethics of war from the perspectives of both states and individuals. War is a crucible that strips those caught up in its horrors down to their fundamental selves inspiring acts of both inhuman depravity and seemingly superhuman nobility. This course is presented in a seminar format with lively discussions centering on contemporary readings in military ethics from texts and journals. Offered as PHIL 317, PHIL 417, and LAWS 5135.

PHIL 320. The Phenomenological Tradition. 3 Units.
The background of phenomenology: Descartes, Kant, and Brentano. The epistemological rationale of Husserl's phenomenology and its ontological implications; the powers and limits of the phenomenological method. Heidegger's transformation of phenomenology to interpretive ontology of human existence. The development of interpretation theory as the foundation of all human existence. The development of interpretation theory as the foundation of all human sciences in Gadamer and Ricoeur. Recommended preparation: PHIL 101. Offered as PHIL 320 and PHIL 420.

PHIL 321. Advanced Indian Philosophy. 3 Units.
We will closely examine a limited number of texts in Jain, Hindu, and/or Buddhist philosophy. Our concern will be the methods, presuppositions, arguments, and goals of these schools and trajectories of thought. What were their theories on the nature of the person, the nature of reality, and the nature and process of knowing? What were the debates between the schools and the major points of controversy? We will spend the majority of time analyzing the arguments or positions as they are found in primary texts (in translation). We will rely on the primary sources found in Sarma Introduction to Classical Indian Philosophy as well as PDFs provided by the instructor. Students will read texts out loud in class and will be expected to comment on the passage or passages. Students are expected to use outside sources in their preparations. The goal of the class is to continue to learn how to make and write arguments against (or in support of) the various positions using the prasangika (reductio ad absurdum) method. The papers are rigorous ones and require the student to present the position and then to posit arguments against it, finding internal incoherences. This is a writing-intensive class. Students will continue to learn how to write as per the genre of Indian philosophy. Offered as RLGN 321 and PHIL 321. Prereq: RLGN 221 or PHIL 221.

PHIL 322. The Science of Happiness. 3 Units.
Open to all students (no prerequisites) interested in happiness, this course provides an intellectually rigorous introduction to the philosophy and science of happiness. Philosophy is often considered a dry academic subject; however the best philosophy is personal and transforms our view of the world. In recent years, science has made huge strides in understanding the psychology and neuroscience of human happiness. This course blends these two sources of insight to address such critical questions as: What is happiness? To what extent is it determined by our genes? To what extent can we control our own happiness? What factors contribute to an individual's happiness? Should we be concerned just with our own happiness, or also with the happiness of others? If happiness is a state of mind, can we change our thinking to make ourselves happier? Every self-proclaimed sage, and countless authors of self-help books, claims to know the secret to happiness. This course provides a more intellectually rigorous approach, based on the writings of great philosophers and cutting edge science.

PHIL 325. Philosophy of Feminism. 3 Units.
Dimensions of gender difference. Definition of feminism. Critical examination of feminist critiques of culture, including especially politics, ideology, epistemology, ethics, and psychology. Readings from traditional and contemporary sources. Offered as PHIL 325, PHIL 425 and WGST 325. Prereq: PHIL 101.

PHIL 330. Topics in Ethics. 3 Units.
Examination of views in ethics of a major philosopher or philosophical school, a significant philosophical topic in ethics, or a topic that relates ethics to philosophy and another discipline. Recommended preparation: PHIL 101, PHIL 102, or PHIL 205. Offered as PHIL 330 and PHIL 430.

PHIL 332. Classical Jewish Religious Thought. 3 Units.
The thought of some major biblical and Rabbinic writings and of the classic age of medieval Jewish philosophy. Offered as JDST 330, PHIL 332, and RLGN 330.

PHIL 333. Philosophy of Religion. 3 Units.
Topics include: classical and contemporary arguments for God's existence; divine foreknowledge and human freedom; the problem of evil and theodicy; nature and significance of religious experience; mysticism; varieties of religious metaphysics; knowledge, belief and faith; nature of religious discourse. Readings from traditional and contemporary sources. Recommended preparation for PHIL 433 and RLGN 433: PHIL 101 or RLGN 102. Offered as PHIL 333, RLGN 333, PHIL 433, and RLGN 433.
PHIL 334. Political and Social Philosophy. 3 Units.
Justification of social institutions, primarily political ones. Such distinctions as that between de facto and legitimate authority; analysis of criteria for evaluation, such as social justice and equality; inquiry into theories of justification of the state; theory of democratic government and its alternatives. Readings from classical and contemporary sources. Recommended preparation: PHIL 101. Offered as PHIL 334, POSC 354, PHIL 434, and POSC 454.

PHIL 335. Philosophy of Law. 3 Units.
This is an examination of the general nature of law, the broad concerns of jurisprudence, the study of comparative law, and many of the issues raised in the literature of legal philosophy. Students will examine the principles of legal positivism, mitigated natural law, and rights theory. Selected readings and cases will illustrate these theories, which will also be examined in the context of rule selection by new governments in developing or revolutionary societies. The course also looks at the general nature of legal systems: how politics, morality, and individual views of justice and rights affect particular court cases and the course and development of law generally. Topics will include abortion, obscenity and sin, civil disobedience, affirmative action, surrogacy, and the death penalty. This is unlike any other of the legal theory or jurisprudence courses, and those who have sampled legal theory elsewhere in a different form are welcome and encouraged to enroll. Recommended preparation: PHIL 101. Offered as LAWS 353, PHIL 335, and PHIL 435.

PHIL 345. Epistemology and Metaphysics. 3 Units.
Traditional problems of epistemology, such as definition of knowledge, justification of belief, nature of evidence and foundationalism, skepticism, the a priori, and the role of sense perception in knowledge. Metaphysical presuppositions and implications of epistemological views. Forms of realism and anti-realism. Recommended preparation: PHIL 101. Offered as PHIL 435 and PHIL 445.

PHIL 355. 19th and Early 20th Century Philosophy. 3 Units.
History of philosophy after Kant up to and including logical empiricism. Interpretation and comparison of important philosophers and philosophical schools of the period in terms of common methods, problems, themes, doctrines, and ideologies. Emphasis on Schopenhauer, Hegel, Kierkegaard, Marx, and Nietzsche. Recommended preparation: PHIL 101. Offered as PHIL 355 and PHIL 455.

PHIL 356. Comparative Philosophy. 3 Units.
Philosophy in the etymological sense of the term, love of wisdom, subsumes ontological, ethical and epistemological inquires addressing fundamental questions about reality, the place of humans in that reality, the values of things and human obligations, and the sources of knowledge. The major purpose of this course is to discover, understand, explicate and articulate the affinities and differences in the way the fundamental questions are addressed in different cultural contexts, thereby to appreciate the cross-cultural kinship among human minds as well as to be challenged by the differences that may engender conflicts. We will explore the possibility of building a trans-cultural meta-cultural meta-discourse in which thinkers from many traditions can participate on equal footing. We will come to face up to the question whether truly universal philosophy is possible, upon what conditions. Representative texts from the Western, Chinese and Buddhist traditions including selected works of Plato, Aristotle, Augustine, Descartes, Kant, Nietzsche, Heidegger, Lao Tzu, Confucius, Chuang Tzu, Dhammapada of the Buddha and D. Suzuki’s Zen Buddhism will be read. Offered as PHIL 356 and PHIL 456. Prereq: PHIL 101 or requisites not met permission.

PHIL 360. Science and Society. 3 Units.
This course examines the complex ethical and other value relationships that exist between science and society. Students will be encouraged to question the simplistic view that science proceeds independently of societal values and contentious ethical commitments. A range of other social factors, such as ethical belief systems, political forces, and large-scale financial interests all influence new scientific and technological developments. In order to illuminate each of these larger themes, this course focuses on three exciting areas of scientific inquiry: stem cell research; synthetic biology; and nanotechnology. Each of these contentious scientific fields provides an excellent view into the challenging ethical, cultural, social, political, and economic issues that will face students, both as scholars and as citizens. No prior technical knowledge is necessary for any of these scientific areas. All relevant scientific information will be provided during the course by the professor. Offered as BETH 360, BETH 460 and PHIL 360.

PHIL 367. Topics in Evolutionary Biology. 3 Units.
The focus for this course on a special topic of interest in evolutionary biology will vary from one offering to the next. Examples of possible topics include theories of speciation, the evolution of language, the evolution of sex, evolution and biodiversity, molecular evolution. ANAT/ANTH/EEPS/PHIL/PHOL 467/BIOLOG 468 will require a longer, more sophisticated term paper, and additional class presentation. Offered as ANTH 367, BIOLOG 368, EEPS 367, PHIL 367, ANAT 467, ANTH 467, BIOLOG 468, EEPS 467, PHIL 467 and PHOL 467. Prereq: PHIL 225 or equivalent.

PHIL 368. Evolutionary Biology Capstone. 3 Units.
This course focuses on a special topic of interest in evolutionary biology that will vary from one offering to the next. Examples of possible topics include theories of speciation, the evolution of language, the evolution of sex, evolution and biodiversity, molecular evolution. Students will participate in discussions and lead class seminars on evolutionary topics and in collaboration with an advisor or advisors, select a topic for a research paper or project. Each student will write a major research report or complete a major project and will make a public presentation of her/his findings. Offered as ANTH 368, BIOLOG 369, and PHIL 368. Counts as SAGES Senior Capstone.

PHIL 371. Advanced Bioethics. 3 Units.
This course offers upper-level instruction on many key bioethical issues introduced in BETH/PHIL 271. The class follows a discussion-intensive seminar format. Students begin with an in-depth analysis of ethical issues surrounding the conduct of clinical trials, both within the U.S. and through U.S.-sponsored research abroad. Next students examine the philosophical and practical challenges involved in medical decision making for adults and pediatric patients. This course concludes by addressing the broader ethical problem of what duties we owe to future generations in terms of our reproductive choices and the allocation of health-related public expenditures. Each of these general topic areas - clinical trials, medical decision making, and future generations - is of crucial importance for all students whether one plans to enter a career in biomedical research, the healthcare professions, or some other career path. Everyone is a potential patient or the family member of a potential patient. The topics covered in Advanced Bioethics will help prepare students to become responsible participants in an increasingly complex biomedical world. Offered as BETH 371 and PHIL 371. Prereq: BETH 271 or PHIL 271.
PHIL 373. Intelligence and Cognition. 3 Units.
This course will focus on the notion and meaning of intelligence. What is intelligence? How is it measured, and are these measures adequate to the task? Is there more than one kind of intelligence? What is the relationship between individuals, genetic factors, biological factors, and socio-cultural-economic factors in the development of intelligence? How are language and thought related to intelligence? What is the difference between intelligence and talent? Intelligence seems to be necessary for culture, art, religious belief, the creation of theories and the quest for knowledge, truth and morality; thus intelligence is a necessary condition for the study of itself. To attempt to understand intelligence is an undertaking in which we will ask questions about the self and the common nature of humanity, while simultaneously examining the abilities of animals and machines. What is the mark of intelligence? Recommended preparation: PHIL 101 or COGS 201. Offered as COGS 373 and PHIL 373.

PHIL 375. Issues in Aesthetics. 3 Units.
This course will seek to offer insight into the nature of artistic expression, the role of criticism in the arts, and the place of the arts in society. The term "arts" will be construed broadly to include painting, photography, theater, film, music, dance, poetry, etc. The following are examples of questions we will discuss. What does the term "beautiful" mean? Are there other measures of aesthetic value besides beauty? Do the arts, like the sciences, offer us knowledge of the world? What value do the arts have for society? Can aesthetic value conflict with moral value? Do artists have a responsibility to society? Should art ever be censored? What is the relationship between art and entertainment? Is the meaning and value of an artistic work a matter of individual opinion? What is the purpose of art critics? How are interpretations and evaluations of art influenced by race, gender, class, etc.? What is creativity in the arts? Does creativity differ from creativity in the sciences? How important is originality in art? Offered as PHIL 375 and PHIL 475. Prereq: PHIL 101 or requisite not met permission.

PHIL 381. Philosophy and Cognitive Neuroscience. 3 Units.
This course will focus on the various methodologies used in the cognitive neurosciences, and explore their strengths and weaknesses from scientific and philosophical standpoints. We will begin by examining baseline measures (including IQ tests, tasks of cognitive flexibility, verbal and visual memory, causal/sequential thinking and narrative tasks) and their experimental design. Lesion methods will follow, with an eye toward understanding the strength of inferences that can be drawn from such data. The course will also focus on imaging techniques (CAT, PET, SPECT, fMRI, TMS, etc.) as well as measures of electrical activity such as EEG and single-cell recordings. Students will become familiar with many fundamental assumptions necessary for the implementation of each method, and philosophical questions associated with these endeavors and their potential impact on our knowledge and society. Recommend preparation: PHIL 101 or COGS 201. Offered as COGS 381 and PHIL 381.

PHIL 384. Ethics and Public Policy. 3 Units.
Evaluation of ethical arguments in contemporary public policymaking discourse. That is, approaches to evaluating not only the efficiency of policy (Will this policy achieve its end for the least cost?) but also the ethics of policy (Are a policy's intended ends ethically justified or "good," and are our means to achieve those ends moral or "just"?). Overview of political ideologies that supply U.S. political actors with their ethical or moral arguments when proposing and implementing public policy, followed by an application of these differing perspectives to selected policy areas such as welfare, euthanasia, school choice, drug laws, censorship, or others. Offered as PHIL 384, PHIL 484, POSC 384 and POSC 484.

PHIL 385. Philosophy of Language. 3 Units.

PHIL 390. Senior Research Seminars in History and Philosophy of Science. 3 Units.
Directed independent research seminar for seniors who are majors in the History and Philosophy of Science program. The goal of the course is to develop and demonstrate command of B.A.-level factual content, methodologies, research strategies, historiography, and theory relevant to the field of history of science and/or philosophy of science. The course includes both written and oral components. Offered as HSTY 380 and PHIL 390. Counts as SAGES Senior Capstone.

PHIL 394. Seminar in Evolutionary Biology. 3 Units.
This seminar investigates 20th-century evolutionary theory, especially the Modern Evolutionary synthesis and subsequent expansions of and challenges to that synthesis. The course encompasses the multidisciplinary nature of the science of evolution, demonstrating how disciplinary background influences practitioners' conceptualizations of pattern and process. This course emphasizes practical writing and research skills, including formulation of testable theses, grant proposal techniques, and the implementation of original research using the facilities on campus and at the Cleveland Museum of Natural History. Offered as ANTH 394, BIOL 394, EEPS 394, HSTY 394, PHIL 394, ANTH 494, BIOL 494, EEPS 494, HSTY 494, and PHIL 494.

PHIL 396. Undergraduate Research in Evolutionary Biology. 3 Units.
Students propose and conduct guided research on an aspect of evolutionary biology. The research will be sponsored and supervised by a member of the CASE faculty or other qualified professional. A written report must be submitted to the Evolutionary Biology Steering Committee before credit is granted. Offered as ANTH 396, BIOL 396, EEPS 396, and PHIL 396.

PHIL 399. Directed Study. 3 Units.
Under faculty supervision, students will undertake a project that demonstrates critical thinking, has clear goals, features periodic reporting of progress, and will result in a final report and public presentation. Counts as SAGES Senior Capstone.

PHIL 403. Topics in Philosophy of Science. 3 Units.
In-depth study of selected topics in general philosophy of science or philosophy of physical, biological, or social science. Topics may include: theories of explanation, prediction, and confirmation; semantics of scientific language; reductionism; space, time and relativity; philosophical issues about quantum mechanics; philosophical issues about life sciences (e.g., evolution, teleology, and functional explanation); explanation and understanding in social sciences; value in social science. Recommended preparation: PHIL 101 or PHIL 201 or PHIL 203. Offered as PHIL 303 and PHIL 403.
PHIL 404. Science and Engineering Ethics. 3 Units.
This course prepares students to recognize ethical problems that commonly arise in the scientific and engineering workplace, to understand ethical concepts, to evaluate ethical arguments, and to critically examine responses to problems and their ethical ramifications. It addresses questions such as: What are the criteria of fairness in crediting contributions to research? How safe is safe enough? What are professional responsibilities, and how do they change over time? What is research misconduct? When is ignorance culpable? What is intellectual property and what protections does it deserve? When is biological testing of workers justified? What are responsible ways of raising concerns, and what supports do good organizations give for raising them? What treatment counts as harassment or as an expression of prejudice? What are good means for controlling it? What are scientists' and engineers' responsibilities for environmental protection? What is a "conflict of interest" and how is it controlled? What protections for human research subjects are warranted? What, if any, use of animals in research is justified? Recommended preparation: PHIL 101 or PHIL 102 or PHIL 205. Offered as PHIL 304 and PHIL 404.

PHIL 405. Ethics. 3 Units.
Analysis of ethical theories and concepts of goodness, right, and obligation. Discussion of nature of justice, problem of justification of moral principles, and relation between facts and values. Recommended preparation: PHIL 101, PHIL 102 or PHIL 205. Offered as PHIL 305 and PHIL 405.

PHIL 406. Mathematical Logic and Model Theory. 3 Units.
Propositional calculus and quantification theory; consistency and completeness theorems; Gödel incompleteness results and their philosophical significance; introduction to basic concepts of model theory; problems of formulation of arguments in philosophy and the sciences. Offered as PHIL 306, MATH 406 and PHIL 406.

PHIL 413. Philosophy of Mathematics. 3 Units.
Logical paradoxes and their effects on foundations of mathematics. Status of mathematical entities and nature of mathematical truths. Formalist, logicist, and intuitionist positions. Recommended preparation: PHIL 101 or PHIL 201. Offered as PHIL 313 and PHIL 413.

PHIL 415. Selected Topics in Philosophy. 3 Units.
Examination of views of a major philosopher or philosophical school, a significant philosophical topic, or a topic that relates to philosophy and other discipline. Recommended preparation: PHIL 101. Offered as PHIL 315 and PHIL 415. Counts as SAGES Departmental Seminar.

PHIL 416. African Political Thought. 3 Units.
Introduction to select themes in the work of contemporary African philosophers, with special emphasis on political thought. In this course, students will learn something about factors affecting the creation and flow of knowledge and ideas about Africa and discuss the relative importance of the "nation-state" as an idea in Europe, pre-colonial Africa, and postcolonial Africa. Offered as PHIL 316/416 and ETHS 316/416.

PHIL 417. War and Morality. 3 Units.
The aim of this course is to explore a wide range of ethical issues relating to the decision to take a nation to war, how wars are conducted, and efforts to establish order in the wake of a conflict. Topics include the Just War tradition, pacifism, humanitarian intervention, moral repair and the establishment of a just peace, conduct of war, warrior codes, warrior transitions, and civil-military relations. We will be examining the ethics of war from the perspectives of both states and individuals. War is a crucible that strips those caught up in its horrors down to their fundamental selves inspiring acts of both inhuman depravity and seemingly superhuman nobility. This course is presented in a seminar format with lively discussions centering on contemporary readings in military ethics from texts and journals. Offered as PHIL 317, PHIL 417, and LAWS 5135.

PHIL 420. The Phenomenological Tradition. 3 Units.
The background of phenomenology: Descartes, Kant, and Brentano. The epistemological rationale of Husserl's phenomenology and its ontological implications; the powers and limits of the phenomenological method. Heidegger's transformation of phenomenology to interpretive ontology of human existence. The development of interpretation theory as the foundation of all human existence. The development of interpretation theory as the foundation of all human sciences in Gadamer and Ricoeur. Recommended preparation: PHIL 101. Offered as PHIL 320 and PHIL 420.

PHIL 425. Philosophy of Feminism. 3 Units.
Dimensions of gender difference. Definition of feminism. Critical examination of feminist critiques of culture, including especially politics, ideology, epistemology, ethics, and psychology. Readings from traditional and contemporary sources. Offered as PHIL 325, PHIL 425 and WGST 325.

PHIL 430. Topics in Ethics. 3 Units.
Examination of views in ethics of a major philosopher or philosophical school, a significant philosophical topic in ethics, or a topic that relates ethics to philosophy and another discipline. Recommended preparation: PHIL 101, PHIL 102, or PHIL 205. Offered as PHIL 330 and PHIL 430.

PHIL 433. Philosophy of Religion. 3 Units.
Topics include: classical and contemporary arguments for God's existence; divine foreknowledge and human freedom; the problem of evil and theodicy; nature and significance of religious experience; mysticism; varieties of religious metaphysics; knowledge, belief and faith; nature of religious discourse. Readings from traditional and contemporary sources. Recommended preparation for PHIL 433 and RLGN 433: PHIL 101 or RLGN 102. Offered as PHIL 333, RLGN 333, PHIL 433, and RLGN 433.

PHIL 434. Political and Social Philosophy. 3 Units.
Justification of social institutions, primarily political ones. Such distinctions as that between de facto and legitimate authority; analysis of criteria for evaluation, such as social justice and equality; inquiry into theories of justification of the state; theory of democratic government and its alternatives. Readings from classical and contemporary sources. Recommended preparation: PHIL 101. Offered as PHIL 334, POSC 354, PHIL 434, and POSC 454.
PHIL 385. Nature of Language; Problems of Meaning, Reference, and Truth. 3 Units.
This course will examine the nature of language with particular attention to the questions of meaning and reference. We will consider the relationship between language and the world, the role of language in thought and communication, and the nature of meaning itself.

PHIL 394. Seminar in Evolutionary Biology. 3 Units.
This seminar investigates 20th-century evolutionary theory, especially the Modern Evolutionary synthesis and subsequent expansions of and challenges to that synthesis. The course encompasses the multidisciplinary nature of the science of evolution, demonstrating how disciplinary background influences practitioners' conceptualizations of pattern and process. This course emphasizes practical writing and research skills, including formulation of testable hypotheses, grant proposal techniques, and the implementation of original research using the facilities on campus and at the Cleveland Museum of Natural History. Offered as ANTH 394, BIOL 394, EEPS 394, HSTY 394, PHIL 394, ANTH 494, BIOL 494, EEPS 494, HSTY 494, and PHIL 494.

PHIL 494. Ethics and Public Policy. 3 Units.
Evaluation of ethical arguments in contemporary public policymaking. The course will cover traditional ethical theories and their application to public policy, with an emphasis on the role of policy analysis and the ethical dimensions of policy decisions. Students will be expected to engage in critical thinking and ethical reasoning, and to develop skills in policy analysis and ethical decision-making.

PHIL 495. Comparative Philosophy. 3 Units.
This course will examine the development of philosophical thought across different cultures and historical periods. We will explore the key themes and questions that have shaped philosophical inquiry in the Western, Islamic, and Eastern traditions, and consider how these traditions interact and influence each other.

PHIL 496. Philosophy of Law. 3 Units.
This is an examination of the general nature of law, the broad concerns of jurisprudence, the study of comparative law, and many of the issues raised in the literature of legal philosophy. Students will examine the principles of legal positivism, mitigated natural law, and rights theory. Selected readings and cases will illustrate these theories, which will also be examined in the context of rule selection by new governments in developing or revolutionary societies. The course also looks at the general nature of legal systems: how politics, morality, and individual views of justice and rights affect particular court cases and the course and development of law generally. Topics will include abortion, obscenity and sin, civil disobedience, affirmative action, surrogacy, and the death penalty. This is unlike any other of the legal theory or jurisprudence courses, and those who have sampled legal theory elsewhere in a different form are welcome and encouraged to enroll. Recommended preparation: PHIL 101. Offered as LAWS 353, PHIL 335, and PHIL 435.

PHIL 497. Philosophy of Science. 3 Units.
This course examines the foundational issues in the philosophy of science, focusing on the nature of scientific knowledge, the methods of scientific inquiry, and the role of scientific theories in our understanding of the world. Students will engage with key texts from the history of science and contemporary debates in the philosophy of science, developing skills in critical thinking and analytical reasoning.

PHIL 498. Philosophy of Language. 3 Units.
Nature of language; problems of meaning, reference, and truth. Offered as PHIL 385 and PHIL 485.

PHIL 499. Independent Study MA Level. 1 - 3 Units.
This course enables graduate students in departments or interdisciplinary programs with an MA to pursue intensive directed study with a faculty member in Philosophy. Students should consult with the Instructor and with their MA director or graduate program director before enrolling. Prereq: Graduate Standing.

PHIL 699. Advanced Tutorial and Dissertation for Candidates in fields related to Philosophy. 1 - 3 Unit.
This course enables students in departments offering the Ph.D. to pursue intensive directed study with a faculty member in Philosophy, on philosophical aspects of their dissertation topic. Students should consult with the instructor and with their dissertation director before enrolling.

Department of Physics
The Department of Physics offers programs leading to the following undergraduate degrees: Bachelor of Arts, Bachelor of Science in
physics, Bachelor of Science in mathematics and physics, and Bachelor of Science in engineering with an engineering physics major. Associated with the Bachelor of Science in physics degree are optional concentrations in mathematical physics and in biophysics. The department also offers the graduate degrees Master of Science and Doctor of Philosophy, as well as a unique master’s degree in entrepreneurship.

All of these programs involve the study of the basic laws of nature and the properties of energy and matter in their various forms. The curriculum reflects the varied interests of the faculty and will prepare students for a wide range of future activities. At the undergraduate level, open electives and engineering physics concentration area courses tailor the programs to the student’s interests and career plans. Employment opportunities at the bachelor’s level include research, development, and technical assistance (engineering, computer programming, management) in industrial, government, and university settings.

A similar flexibility exists in the first few years of graduate study. The research leading to the PhD degree normally centers on a specific area of physics. However, even at this stage, the broad background and training characteristic of a physics degree are emphasized.

BA in Physics (p. 257) | BS in Physics (p. 257) | BSE in Engineering Physics (p. 257) | BS Math and Physics (p. 257) | Minor (p. 257)

Undergraduate Programs

Majors

Course requirements and typical schedules for the majors are summarized in the Plan of Study Grids (click the button above).

Bachelor of Arts in Physics

The BA physics major includes a large number of elective courses, making it easy for the student to pursue other interests or complete a second major while earning a degree in physics.

Teacher Licensure Option

The Physics department offers a special option for undergraduate students who wish to pursue a physics major and a career in teaching. The Adolescent to Young Adult (AYA) Teacher Education Program in Physical Sciences prepares CWRU students to receive an Ohio Teaching License for grades 7-12. Students declare a second major in education, which involves 34 hours in Education and practicum requirements, and complete a planned sequence of physics courses within the context of the BA Physics major. The program is designed to offer several unique features not found in other programs and to place students in mentored teaching situations throughout their teacher preparation career. This small, rigorous program is designed to capitalize on the strengths of CWRU’s Physics department, its Teacher Education Program, and the relationships the university has built with area schools. (For details on education course work, see the program description for Teacher Licensure (p. 312) elsewhere in this bulletin.)

Bachelor of Science in Physics

The BS degree has two alternatives to the standard program: a mathematical physics concentration and a biophysics concentration.

BSE Degree in Engineering Physics

The BSE degree in engineering physics supplies an excellent background for graduate studies in physics, but is also designed for students who value an engineering credential and who are considering a career in engineering, either through employment following the BSE or through engineering graduate studies. This degree is awarded by the Case School of Engineering and includes the Engineering Core Curriculum. The technical electives in this program are concentrated in any of sixteen specific engineering areas.

BS in Mathematics and Physics

The BS in mathematics and physics is a single degree for students interested in advanced mathematics and theoretical physics. This degree is distinct from the mathematical physics concentration in the BS in physics degree. The program is jointly administered by the Department of Physics and the Department of Mathematics. Applied Mathematics, and Statistics. Students may be advised by faculty members from either department.

All BS, BA, and BSE candidates complete a year-long senior project in which they work one-on-one with a faculty researcher, write a senior thesis, and present their work in public.

Minor

Course requirements for the minor in physics are as follows:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 121</td>
<td>General Physics I - Mechanics</td>
<td>4</td>
</tr>
<tr>
<td>or PHYS 116</td>
<td>Introductory Physics II</td>
<td></td>
</tr>
<tr>
<td>or PHYS 123</td>
<td>Physics and Frontiers I - Mechanics</td>
<td></td>
</tr>
<tr>
<td>PHYS 122</td>
<td>General Physics II - Electricity and Magnetism</td>
<td>4</td>
</tr>
<tr>
<td>or PHYS 116</td>
<td>Introductory Physics II</td>
<td></td>
</tr>
<tr>
<td>or PHYS 124</td>
<td>Physics and Frontiers II - Electricity and Magnetism</td>
<td></td>
</tr>
<tr>
<td>PHYS 221</td>
<td>Introduction to Modern Physics</td>
<td>3</td>
</tr>
<tr>
<td>Two of the following courses:</td>
<td>6</td>
<td></td>
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<tr>
<td>PHYS 301</td>
<td>Advanced Laboratory Physics I</td>
<td></td>
</tr>
<tr>
<td>PHYS 310</td>
<td>Classical Mechanics</td>
<td></td>
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<tr>
<td>PHYS 313</td>
<td>Thermodynamics and Statistical Mechanics</td>
<td></td>
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<tr>
<td>PHYS 315</td>
<td>Introduction to Solid State Physics</td>
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<tr>
<td>PHYS 316</td>
<td>Introduction to Nuclear and Particle Physics</td>
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<tr>
<td>PHYS 320</td>
<td>Introduction to Biological Physics</td>
<td></td>
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<tr>
<td>PHYS 324</td>
<td>Electricity and Magnetism I</td>
<td></td>
</tr>
<tr>
<td>PHYS 326</td>
<td>Physical Optics</td>
<td></td>
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<tr>
<td>PHYS 327</td>
<td>Laser Physics</td>
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<tr>
<td>PHYS 328</td>
<td>Cosmology and the Structure of the Universe</td>
<td></td>
</tr>
<tr>
<td>or PHYS 336</td>
<td>Modern Cosmology</td>
<td></td>
</tr>
<tr>
<td>PHYS 331</td>
<td>Introduction to Quantum Mechanics I</td>
<td></td>
</tr>
<tr>
<td>PHYS 332</td>
<td>Introduction to Quantum Mechanics II</td>
<td></td>
</tr>
</tbody>
</table>

Total Units 17

Graduate Programs in Physics

Overview

The graduate student in physics has two primary responsibilities: to broaden and deepen his or her own understanding of physics, and to contribute in a significant way to the progress of physics as a research discipline. Neither of these efforts can be completely separated from the other. Your understanding of physics is necessarily reflected in your research: your research will help to deepen your understanding of physics. However, the relative emphasis gradually shifts during graduate
study from early concentration on formal course work to the original research necessary for a Ph.D. dissertation.

At Case Western Reserve University, the formal requirements for the Ph.D. degree are a course requirement, a qualifying examination, and a dissertation requirement. Exceptions to these departmental requirements are possible, and individual requests for changes will be carefully considered. There is no foreign language requirement.

Although most students apply to the department’s Ph.D. program, the department maintains a master’s degree program as well. This program involves fewer courses than the Ph.D. program, and may or may not involve a dissertation, depending upon the student’s needs and interests. Requirements for this program are outlined in this brochure.

The department has a master’s track in Physics Entrepreneurship. This program is designed for students who have a background in physics and a passion for innovation, entrepreneurship, and working for small companies and startups. Students study graduate-level physics, practical business, and technology innovation while working on a real-world entrepreneurial project with an existing company or their own startup. The Physics Entrepreneurship Program helps connect students with mentors, advisors, partners, funding sources and job opportunities. The requirements for this master’s track are also outlined in this brochure.

**Requirements for Graduation**

Requirements for the Ph.D. degree include coursework, the Ph.D. qualifying examination, a topical oral examination, and submission and defense of a written thesis.

Requirements for the master’s degree include coursework, a comprehensive examination, and an optional thesis.

Requirements for the master’s degree, Entrepreneurship Track, include coursework, a qualifying examination, and a required thesis.

**Required Courses for the Ph.D. Degree**

With the help of a faculty advisor, students choose a curriculum of course work from among a large array of offerings in physics and related science and engineering departments. The University requires a total of 36 hours of course work for students entering with a bachelor’s degree, or 18 hours of course work for those students entering with a master’s degree. This requirement may be met by supervised research, by lecture courses, by reading courses, or a combination. Twelve of the course hours involve required courses, but any of these requirements may be waived for students who have had the equivalent material elsewhere or, in the case of Graduate Laboratory, equivalent experience elsewhere. The required courses are:

Two from the following five:

- PHYS 427 Laser Physics
- PHYS 431 Physics of Imaging
- PHYS 441 Physics of Condensed Matter I
- PHYS 451 Empirical Foundations of the Standard Model
- PHYS 465 General Relativity or PHYS 436 Modern Cosmology

Additionally, students are required to take PHYS 472 Graduate Physics Laboratory plus one additional 400- or 500-level lecture course from the following list*:

- PHYS 442 Physics of Condensed Matter II
- PHYS 451 Empirical Foundations of the Standard Model
- PHYS 460 Advanced Topics in NMR Imaging
- PHYS 539 Special Topics Seminar
- PHYS 566 Cosmology
- PHYS 581 Quantum Mechanics III
- PHYS 591 Gauge Field Theory I

*Other courses, either in physics or in other departments, may be substituted by petition. Note that courses that have dual listings with 300-level courses generally do not satisfy this requirement.

Although not required, most students take the following introductory courses during the first year, as much of the Ph.D. qualifying exam is based on material in these courses:

- PHYS 331 Introduction to Quantum Mechanics I and PHYS 332 Introduction to Quantum Mechanics II
- PHYS 423 Classical Electromagnetism
- PHYS 413 Classical and Statistical Mechanics I and PHYS 414 Classical and Statistical Mechanics II

The classroom lecture courses will be augmented by official reading courses, which will have specified syllabi (published in the catalogue and monitored by the Graduate Committee), graded homework, and final examinations. Courses in special topics, as well as individualized study, can be arranged by mutual consent when the demand is sufficient.

**Required Courses for the Master’s Degree**

The requirements for the M.S. degree depend on whether or not the candidate completes the research and writing for a master’s thesis. A total of 27 credit hours of graduate coursework must be completed. The two options corresponding to Program A (with thesis) and Program B (without thesis) are as follows:

**Program A: M.S. with Thesis**

- PHYS 413 Classical and Statistical Mechanics I (3 hours)
- PHYS 423 Classical Electromagnetism (3 hours)
- PHYS 651 Thesis M.S. (6 to 9 hours)
- Other graduate courses (15 to 12 hours, of which at least 6 must be in physics)
- Thesis and oral defense

**Program B: M.S. without Thesis**

- PHYS 413 Classical and Statistical Mechanics I (3 hours)
- PHYS 423 Classical Electromagnetism (3 hours)
- Other graduate courses (21 hours, of which at least 9 must be in physics)
- Comprehensive examination (Given in May and August)

The 27 hours of required courses can generally be completed in three semesters, though thesis research and writing may take longer. Candidates must be in residence (paying tuition) during the semester in which they complete requirements and receive the degree; applications for degree should be filed early in the third semester. Candidates for the Ph.D. degree may apply for and receive M.S. degrees on the basis of work completed toward the Ph.D. degree.

**Required Courses for the Master’s Degree, Entrepreneurship Track**

- PHYS 331 Introduction to Quantum Mechanics I
- PHYS 423 Classical Electromagnetism
- PHYS 413 Classical and Statistical Mechanics I
- PHYS 414 Classical and Statistical Mechanics II
- PHYS 488 Entrepreneurship Project
- PHYS 499 Entrepreneurship Seminar
A student will be admitted to Ph.D. candidacy upon passing the qualifying exam and upon a vote of the faculty to determine whether the student is making satisfactory academic progress.

**Topical Oral Exam**

Within one year of formal association with a research advisor, but no later than the end of the fifth semester after a student matriculates, each student will have an oral examination of her/his research progress with the dissertation committee. The examination will consist of a presentation by the student relating to literature in her/his thesis topic, a proposed direction for work, and a progress report. Passing this examination is a requirement for the Ph.D. degree. If the time deadline cannot be met because of extenuating circumstances, the student may petition the graduate committee for an extension.

**Advising**

Upon entry to graduate school, the master's or Ph.D. student's academic advisor will be the department's Director of Graduate Studies. Eventually, each successful student will acquire a research advisor and dissertation committee. At that time, the responsibility of the Director of Graduate Studies will greatly diminish, but not vanish entirely. It will remain the Graduate Studies Director's responsibility to assist the research advisor in academic matters. The Director of Graduate Studies, as well as the research advisor, will countersign the student's course program. It is the responsibility of the Director of Graduate Studies to follow the career of the student and see that all requirements for the degree are fulfilled.

The Director of the Physics Entrepreneurship Program will be the academic advisor for students in the Entrepreneurship Track of the master's program. Each successful student will also acquire a research advisor and thesis committee, which will meet with the student at least once per semester. It is the responsibility of the Director of the Physics Entrepreneurship Program to follow the career of the students in this track and see that all requirements for the degree are fulfilled.

**Ph.D. Research and Dissertation**

A Ph.D. degree implies, in addition to the course and qualifying exam requirements, the performance of a piece of original research and its presentation as a doctoral dissertation. The research requirement for the Ph.D. is at the heart of the doctoral program. The final requirement for the Ph.D. degree is the written doctoral dissertation and oral defense.

Entering students should interest themselves in the available research possibilities in the physics department at an early state of their careers. They should be thinking about the area of interest, the kind of problem they would like to tackle, and the faculty member under whose direction they would like to work. As soon as they have passed the qualifying exam, they should devote themselves increasingly to research.

By January or February of the first year, the student should begin to speak with faculty members about their research, and ultimately find a faculty member who will sponsor and supervise the student's work. The relationship between a student and research advisor is a very close one. It is in the course of this relationship that students develop their skills in the actual doing of physics. Students should give much thought to their choice of research area and research advisor. Once a student has made this commitment, it takes the highest priority. Students must understand that they are unlikely to bring their thesis research to a successful conclusion without a total commitment on their part. Our policy on financial support of graduate students reflects the importance of such
a commitment. Renewal of a student's support will be contingent upon evidence of progress toward a degree.

Colloquia and Seminars

In addition to course work and individualized direction in research, the physics department provides a third medium of teaching, colloquia and seminars, which are shared by students and faculty alike.

Colloquia are talks of a general nature, given at a level that all graduate students in all areas of physics should be able to follow. They are usually held on Thursdays. Notices (and, whenever possible, brief introductions to the subject) will be distributed well in advance of each colloquium. Graduate students are urged and expected to attend all of these colloquia. (All graduate students are required to register each semester for the zero-credit-hour course PHYS 666 Frontiers in Physics, which consists of attendance at colloquia.)

Seminars tend to deal with more specific topics and often require some expertise in the field. Some groups hold weekly luncheon seminars; others meet whenever a speaker is available. Advanced students are expected not only to attend, but also to participate in the seminars in their fields. Students who have not yet chosen a field of research may find the seminars a valuable means of sampling the types of research available. Students in the Entrepreneurship Track are expected to attend all of that program's seminars, and are encouraged to attend other relevant seminars.

Policy on Working outside the Department

The teaching and research assistantships represent a rich and exciting experience and a total time commitment on the part of both the graduate student and his or her advisor. It is generally not advisable for a student to accept other employment or non-family responsibilities, inside or outside of the department or university. If a student nevertheless desires an additional position, written approval must first be obtained from the student's advisor, and a petition then made to the Graduate Committee. Prior approval of the committee is required in order to avoid a possible reduction or termination in assistantship financial support.

A variety of special circumstances may arise in the case of students in the Entrepreneurship Track. Oversight will be provided by the Physics Entrepreneurship Committee, and approval of the Director of the Physics Entrepreneurship Program is required.

Requirements Tables for Physics Programs

Bachelor of Arts in Physics

The Bachelor of Arts degree with a physics major requires completion of the Arts and Sciences General Education Requirements (GER) and 120 total credits, of which 50 are specified by the physics department as shown below. Courses specified for this major satisfy the 6-credit Arts and Sciences GER in Sciences and Mathematics.

<table>
<thead>
<tr>
<th>One of the following:</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 115</td>
<td>Introductory Physics I</td>
</tr>
<tr>
<td>PHYS 121</td>
<td>General Physics I - Mechanics</td>
</tr>
<tr>
<td>PHYS 123</td>
<td>Physics and Frontiers I - Mechanics</td>
</tr>
<tr>
<td>One of the following:</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 116</td>
<td>Introductory Physics II</td>
</tr>
<tr>
<td>PHYS 122</td>
<td>General Physics II - Electricity and Magnetism</td>
</tr>
</tbody>
</table>

- All of the following:
  - PHYS 221  | Introduction to Modern Physics  | 3 |
  - PHYS 301  | Advanced Laboratory Physics I  | 3 |
  - PHYS 303  | Advanced Laboratory Physics Seminar  | 1 |
  - PHYS 313  | Thermodynamics and Statistical Mechanics  | 3 |
  - PHYS 331  | Introduction to Quantum Mechanics I  | 3 |
  - Two of the following:
    - PHYS 250  | Computational Methods in Physics |
    - PHYS 310  | Classical Mechanics |
    - PHYS 315  | Introduction to Solid State Physics |
    - PHYS 316  | Introduction to Nuclear and Particle Physics |
    - PHYS 320  | Introduction to Biological Physics |
    - PHYS 324  | Electricity and Magnetism I |
    - PHYS 326  | Physical Optics |
    - PHYS 327  | Laser Physics |
    - PHYS 328  | Cosmology and the Structure of the Universe  |
    - PHYS 336  | Modern Cosmology  |
    - PHYS 365  | General Relativity |

- All of the following:
  - Intro Science 1  | 3 |
  - Intro Science 2  | 3 |
  - ENGR 131  | Elementary Computer Programming  | 3 |
  - or EECS 132  | Introduction to Programming in Java |
  - MATH 121  | Calculus for Science and Engineering I  | 4 |
  - or MATH 125  | Math and Calculus Applications for Life, Managerial, and Social Sci I |
  - One of the following: | 4 |
    - MATH 122  | Calculus for Science and Engineering II |
    - MATH 124  | Calculus II |
    - MATH 126  | Math and Calculus Applications for Life, Managerial, and Social Sci II |
  - MATH 223  | Calculus for Science and Engineering III  | 3 |
  - or MATH 227  | Calculus III |
  - MATH 224  | Elementary Differential Equations  | 3 |
  - SAGES First and University Seminars  | 10 |
  - SAGES Departmental Seminar  | 2-3 |
  - SAGES Capstone  | 3-4 |
  - Breadth Requirements  | 12 |
  - Open electives  | 43-41 |
  - PHED Physical Education (2 semesters)  | 0 |

Total Units  | 120 |

1 Students may choose only one of these two courses to satisfy the requirements of the BA degree.
A two-course science sequence chosen from ASTR 221 Stars and Planets and ASTR 222 Galaxies and Cosmology; CHEM 105 Principles of Chemistry I and CHEM 106 Principles of Chemistry II; CHEM 111 Principles of Chemistry for Engineers and ENGR 145 Chemistry of Materials; BIOL 214 Genes, Evolution and Ecology and BIOL 215 Cells and Proteins; EEPS 101 (Earth & Planets) or EEPS 110 (Physical Geology); and EEPS 115 (Introduction to Oceanography) or EEPS 117 (Weather and Climate or another two-course sequence totaling 6 or more credits in a quantitative science (other than physics), with approval of the physics undergraduate curriculum committee.

PHYS 303 + PHYS 352 can be used to satisfy this requirement.

PHYS 351 can be used to satisfy this requirement.

The breadth requirements include 6 hours of Social Sciences and 6 hours of Arts and Humanities. This may increase by 3 credits if the required Global and Cultural Diversity course is not also one of the breadth requirement courses. Courses required for the BA in Physics satisfy the 6-credit GER for Natural Sciences and Mathematics as well as the Quantitative Reasoning course requirement.

The number of open electives will vary depending on course choices made by each student. The BA degree requires a minimum of 30 semester hours at the 300-400 level, of which only 16 are specified as PHYS courses. No more than 42 hours beyond the 100-level in any one department (the physics BA specifies 19 such credits) may be applied to the 120 credit total and at least 90 credits must be in the College of Arts and Sciences.

**Typical Schedule**

**First Year**

<table>
<thead>
<tr>
<th>Units</th>
<th>Fall</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Physics I - Mechanics (PHYS 121)</td>
<td>4</td>
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<tr>
<td>or Physics and Frontiers I - Mechanics (PHYS 123)</td>
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</tr>
<tr>
<td>Calculus for Science and Engineering I (MATH 121)</td>
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<td>Intro Science Elective I</td>
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<td>SAGES First Seminar</td>
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<tr>
<td>Physics Today and Tomorrow (PHYS 166)</td>
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<tr>
<td>PHED Physical Education Activities</td>
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<td>Calculus for Science and Engineering II (MATH 122)</td>
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</tr>
<tr>
<td>General Physics II - Electricity and Magnetism (PHYS 122)</td>
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<td></td>
</tr>
<tr>
<td>or Physics and Frontiers II - Electricity and Magnetism (PHYS 124)</td>
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<td>Elementary Computer Programming (ENGR 131)</td>
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**Second Year**

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<tbody>
<tr>
<td>Introduction to Modern Physics (PHYS 221)</td>
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<tr>
<td>Calculus for Science and Engineering III (MATH 223)</td>
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<tr>
<td>Humanities/Social Science Elective</td>
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<tr>
<td>Open Elective</td>
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**Third Year**

<table>
<thead>
<tr>
<th>Units</th>
<th>Fall</th>
<th>Spring</th>
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<tbody>
<tr>
<td>Advanced Laboratory Physics I (PHYS 301)</td>
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<tr>
<td>Advanced Laboratory Physics Seminar (PHYS 303)</td>
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<tr>
<td>Thermodynamics and Statistical Mechanics (PHYS 313)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Introduction to Quantum Mechanics I (PHYS 331)</td>
<td>3</td>
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<td>Humanities/Social Science Elective</td>
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<td>Open Elective</td>
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<td>Physics Elective</td>
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<tr>
<td>Global and Cultural Diversity Elective</td>
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<td>Humanities/Social Science Elective</td>
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<td>Open Elective</td>
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<tr>
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</table>

**Fourth Year**

<table>
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<tr>
<th>Units</th>
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<tbody>
<tr>
<td>Senior Physics Project (PHYS 351)</td>
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<tr>
<td>Senior Physics Project Seminar (PHYS 352)</td>
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<tr>
<td>Year Total:</td>
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</tr>
</tbody>
</table>

**Total Units in Sequence:** 120

**Bachelor of Science in Physics**

The Bachelor of Science in physics requires completion of the courses listed in the table below as well as the Arts and Sciences General Education Requirements, for a total of 127 credits. Many courses may be taken at times other than those shown in the "Typical Schedule" tables below.

<table>
<thead>
<tr>
<th>Units</th>
<th>Fall</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 121</td>
<td>General Physics I - Mechanics</td>
<td>4</td>
</tr>
<tr>
<td>or PHYS 123</td>
<td>Physics and Frontiers I - Mechanics</td>
<td></td>
</tr>
<tr>
<td>PHYS 122</td>
<td>General Physics II - Electricity and Magnetism</td>
<td>4</td>
</tr>
<tr>
<td>or PHYS 124</td>
<td>Physics and Frontiers II - Electricity and Magnetism</td>
<td></td>
</tr>
<tr>
<td>PHYS 203</td>
<td>Analog and Digital Electronics</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 204</td>
<td>Advanced Instrumentation Laboratory</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 221</td>
<td>Introduction to Modern Physics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 250</td>
<td>Computational Methods in Physics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 301</td>
<td>Advanced Laboratory Physics I</td>
<td>3</td>
</tr>
</tbody>
</table>
Typical Schedule

First Year

Units
Fall Spring

General Physics I - Mechanics (PHYS 121) 4
or Physics and Frontiers I - Mechanics (PHYS 123)
Calculus for Science and Engineering I (MATH 121) 4
Principles of Chemistry I (CHEM 105) 3-4
or Principles of Chemistry for Engineers (CHEM 111)
SAGES First Seminar 4
Physics Today and Tomorrow (PHYS 166) 1
PHED Physical Education Activities 0
General Physics II - Electricity and Magnetism (PHYS 122)
or Physics and Frontiers II - Electricity and Magnetism (PHYS 124)
Calculus for Science and Engineering II (MATH 122) 4
Principles of Chemistry II (CHEM 106) 3-4
or Chemistry of Materials (ENGR 145)
Elementary Computer Programming (ENGR 131) 3
University Seminar 3
PHED Physical Education Activities 0
Year Total: 16-17 17-18

Second Year

Units
Fall Spring

Analog and Digital Electronics (PHYS 203) 4
Introduction to Modern Physics (PHYS 221) 3
Calculus for Science and Engineering III (MATH 223) 3
University Seminar 3
Humanities/Social Science Elective 3
Advanced Instrumentation Laboratory (PHYS 204) 4
Computational Methods in Physics (PHYS 250) 3
Classical Mechanics (PHYS 310) 3
Elementary Differential Equations (MATH 224) 3
Humanities/Social Science Elective 3
Year Total: 16 16

Third Year

Units
Fall Spring

Advanced Laboratory Physics I (PHYS 301) 3
Advanced Laboratory Physics Seminar (PHYS 303) 1
Thermodynamics and Statistical Mechanics (PHYS 313)
Introduction to Quantum Mechanics I (PHYS 331) 3
Humanities/Social Science Elective 3
Open Elective 3
Advanced Laboratory Physics II (PHYS 302) 4
Electricity and Magnetism I (PHYS 324) 3
Introduction to Quantum Mechanics II (PHYS 332) 3
Global and Cultural Diversity Elective 3
Open Elective 3
Year Total: 16 16

Total Units 127

1 PHYS 303 Advanced Laboratory Physics Seminar + PHYS 352 Senior Physics Project Seminar can be used to satisfy this requirement.
2 PHYS 351 can be used to satisfy this requirement.
3 The breadth requirements include 6 hours of Social Sciences and 6 hours of Arts and Humanities. This may increase by 3 credits if the required Global and Cultural Diversity course is not also one of the breadth requirement courses. Courses required for the BS in physics satisfy the 6-credit GER for Natural Sciences and Mathematics as well as the Quantitative Reasoning course requirement.
4 The number of open electives may vary, depending on course choices made by the student, but the degree requires that the total number of credits be at least 127.
Fourth Year

<table>
<thead>
<tr>
<th>Units</th>
<th>Fall</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity and Magnetism II (PHYS 325)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Senior Physics Project (PHYS 351)</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Senior Physics Project Seminar (PHYS 352)</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Condensed Matter Physics Elective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Open Elective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Open Elective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Senior Physics Project (PHYS 351)</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Particle/Astrophysics Elective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Humanities/Social Science Elective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Open Elective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Year Total:</td>
<td>15</td>
<td>15-13</td>
</tr>
</tbody>
</table>

Total Units in Sequence: 127

**Bachelor of Science in Physics with Mathematical Physics Concentration**

Students who are interested in theoretical physics and who have a strong background in mathematics may consider this concentration. The program is based on the BS in physics, but with certain substitutions in the course requirements. Several of the laboratory courses are replaced by advanced mathematics courses, and some of the undergraduate physics courses are replaced by graduate courses.

This program is not the same as the BS program in mathematics and physics, which provides a coherent and parallel education in both mathematics and physics.

The following table shows the requirements for the Bachelor of Science in physics with mathematical physics concentration.

| PHYS 121 | General Physics I - Mechanics | 4 |
| or PHYS 123 | Physics and Frontiers I - Mechanics |
| PHYS 122 | General Physics II - Electricity and Magnetism | 4 |
| or PHYS 124 | Physics and Frontiers II - Electricity and Magnetism |
| PHYS 203 | Analog and Digital Electronics | 4 |
| PHYS 221 | Introduction to Modern Physics | 3 |
| PHYS 250 | Computational Methods in Physics | 3 |
| PHYS 301 | Advanced Laboratory Physics I | 3 |
| PHYS 303 | Advanced Laboratory Physics Seminar | 1 |
| PHYS 310 | Classical Mechanics | 3 |
| PHYS 313 | Thermodynamics and Statistical Mechanics | 3 |
| PHYS 349 | Methods of Mathematical Physics I | 3 |
| PHYS 350 | Methods of Mathematical Physics II | 3 |
| PHYS 481 | Quantum Mechanics I | 3 |
| Choose PHYS 423 or both PHYS 324 & PHYS 325 | |
| PHYS 423 | Classical Electromagnetism | 3 |
| PHYS 324 | Electricity and Magnetism I | |
| PHYS 325 | Electricity and Magnetism II | |
| PHYS 482 | Quantum Mechanics II | 3 |
| M-Group 1, 2 & 3 | 1 |
| Choose one of the following: | |

1. M-group 1, 2 and 3 are to be chosen, in consultation with the advisor, from among approved advanced mathematics or statistics courses.

2. PHYS 303 Advanced Laboratory Physics Seminar + PHYS 352 Senior Physics Project Seminar can be used to satisfy the SAGES departmental seminar requirement.

3. PHYS 351 can be used to satisfy the SAGES capstone requirement.

4. The breadth requirements include 6 hours of Social Sciences and 6 hours of Arts and Humanities. This may increase by 3 credits if the required Global and Cultural Diversity course is not also one of the breadth requirement courses. Courses required for the BS in physics satisfy the 6-credit GER for Natural Sciences and Mathematics as well as the Quantitative Reasoning course requirement.

5. The number of open electives may vary, depending on course choices made by the student, but the degree requires that the total number of credits be at least 127.

**Typical Schedule**

<table>
<thead>
<tr>
<th>Units</th>
<th>Fall</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Physics I - Mechanics (PHYS 121)</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>or Physics and Frontiers I - Mechanics (PHYS 123)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calculus for Science and Engineering I (MATH 121)</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>
### Principles of Chemistry I (CHEM 105) 3-4
or Principles of Chemistry for Engineers (CHEM 111)

### Physics Today and Tomorrow (PHYS 166) 1

### SAGES First Seminar 4

### PHED Physical Education Activities 0

### General Physics II - Electricity and Magnetism (PHYS 122) 4
or Physics and Frontiers II - Electricity and Magnetism (PHYS 124)

### Calculus for Science and Engineering II (MATH 122) 4

### Principles of Chemistry II (CHEM 106) 3-4
or Chemistry of Materials (ENGR 145)

### Elementary Computer Programming (ENGR 131) 3

### University Seminar 3

### Humanities/Social Science Elective 3

### PHED Physical Education Activities 0

### Year Total: 16-17 20-21

---

#### Second Year

<table>
<thead>
<tr>
<th>Units</th>
<th>Fall</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analog and Digital Electronics (PHYS 203)</td>
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<td></td>
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<tr>
<td>Introduction to Modern Physics (PHYS 221)</td>
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<tr>
<td>Calculus for Science and Engineering III (MATH 223)</td>
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<td>Computational Methods in Physics (PHYS 250)</td>
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<td>Open Elective</td>
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#### Third Year

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<tbody>
<tr>
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<td>Methods of Mathematical Physics I (PHYS 349)</td>
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<td>Quantum Mechanics I (PHYS 481)</td>
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<tr>
<td>Humanities/Social Science Elective</td>
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<td></td>
</tr>
<tr>
<td>Methods of Mathematical Physics II (PHYS 350)</td>
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<tr>
<td>Quantum Mechanics II (PHYS 482)</td>
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<td>Global and Cultural Diversity Elective</td>
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<td>Advanced Mathematics Elective</td>
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#### Fourth Year

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### Bachelor of Science in Physics with Biophysics Concentration

This concentration is directed towards students interested in the combined study of biology and physics. The degree is a track within the standard BS in physics, in which four physics courses and certain open electives are replaced by a "biogroup" of five courses and a technical elective.

The following table illustrates the requirements for the Bachelor of Science in physics with biophysics concentration.

<table>
<thead>
<tr>
<th>Units</th>
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<tbody>
<tr>
<td>PHYS 121</td>
<td>General Physics I - Mechanics</td>
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<td>or PHYS 123</td>
<td>Physics and Frontiers I - Mechanics</td>
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<td>General Physics II - Electricity and Magnetism</td>
<td>4</td>
</tr>
<tr>
<td>or PHYS 124</td>
<td>Physics and Frontiers II - Electricity and Magnetism</td>
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<tr>
<td>PHYS 203</td>
<td>Analog and Digital Electronics</td>
<td>4</td>
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<td>PHYS 204</td>
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<td>Introduction to Modern Physics</td>
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<td>PHYS 250</td>
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<td>Introduction to Quantum Mechanics</td>
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<td>or MATH 227</td>
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<td>B-Group 4</td>
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</table>
B-Group 5  \(^2\)  3-4  
SAGES First and University Seminars  10  
SAGES Departmental Seminar  \(^3\)  2-3  
SAGES Capstone  \(^4\)  3-4  
Breadth Requirements  \(^5\)  12  
Open Electives  \(^6\)  16-9  
PHED 2 Semesters  0  

**Total Units** 127

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1. Suggested technical electives include PHYS 315 Introduction to Solid State Physics, PHYS 316 Introduction to Nuclear and Particle Physics, PHYS 326 Physical Optics, PHYS 327 Laser Physics, PHYS 328 Cosmology and the Structure of the Universe, PHYS 336 Modern Cosmology, PHYS 365 General Relativity.

2. B-group 1-5 are to be chosen in consultation with the biophysics academic advisor from among approved biology, biophysics, biochemistry, and biomedical engineering courses, including certain prerequisites as needed (e.g., chemistry). BIOL 214 Genes, Evolution and Ecology and BIOL 215 Cells and Proteins are suggested for B-group 1 and 2. The listing of credits includes numbers for the most likely choices of courses and, in parentheses, possible alternatives.

3. PHYS 303 Advanced Laboratory Physics Seminar + PHYS 352 Senior Physics Project Seminar can be used to satisfy the SAGES departmental seminar requirement.

4. PHYS 351 can be used to satisfy the SAGES capstone requirement.

5. The breadth requirements include 6 hours of Social Sciences and 6 hours of Arts and Humanities. This may increase by 3 credits if the required Global and Cultural Diversity course is not also one of the breadth requirement courses. Courses required for the B.S. in Physics satisfy the 6-credit GER for Natural Sciences and Mathematics as well as the Quantitative Reasoning course requirement.

6. The number of open electives may vary, depending on course choices made by the student, but the degree requires that the total number of credits be at least 127.

---

### Typical Schedule

#### First Year

<table>
<thead>
<tr>
<th>Units</th>
<th>Fall</th>
<th>Spring</th>
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<tbody>
<tr>
<td>General Physics I - Mechanics (PHYS 121)</td>
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<td>General Physics II - Electricity and Magnetism (PHYS 122)</td>
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#### Second Year

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#### Third Year

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<td>Introduction to Quantum Mechanics I (PHYS 331)</td>
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#### Fourth Year

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<td>Senior Physics Project (PHYS 351)</td>
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**Total Units in Sequence:** 127
Bachelor of Science in Engineering with Engineering Physics Major

The engineering physics major allows students with strong interests in both physics and engineering to concentrate their studies in the common areas of these disciplines. The major prepares students to pursue careers in industry, either directly after undergraduate studies, or following graduate study in engineering or physics. Many employers value the unique problem-solving approach of physics, especially in industrial research and development.

Students majoring in engineering physics complete the Engineering Core as well as a rigorous course of study in physics. Students select a concentration area from an engineering discipline, and must complete a sequence of at least four courses in this discipline. In addition, a senior research project under the guidance of a faculty member is required. The project includes a written report and participation in the senior seminar and symposium.

First Year

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<thead>
<tr>
<th>Units</th>
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<th>Spring</th>
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<tbody>
<tr>
<td>General Physics I - Mechanics (PHYS 121)</td>
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<td>Calculus for Science and Engineering I (MATH 121)</td>
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<td>Principles of Chemistry for Engineers (CHEM 111)</td>
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<td>SAGES First Seminar</td>
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<td>Calculus for Science and Engineering II (MATH 122)</td>
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<td>Elementary Computer Programming (ENGR 131)</td>
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<td>Chemistry of Materials (ENGR 145)</td>
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Second Year

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<tr>
<td>Introduction to Modern Physics (PHYS 221)</td>
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<td>Statics and Strength of Materials (ENGR 200)</td>
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<td>Introduction to Circuits and Instrumentation (ENGR 210)</td>
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<td>Instrumentation and Signal Analysis Laboratory (PHYS 208)</td>
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<td>Classical Mechanics (PHYS 310)</td>
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<td>Elementary Differential Equations (MATH 224)</td>
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<tr>
<td>Thermodynamics, Fluid Dynamics, Heat and Mass Transfer (ENGR 225)</td>
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Third Year

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<tbody>
<tr>
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Fourth Year

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<td>Year Total:</td>
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Total Units in Sequence: 129

1. Selected students may be invited to take MATH 123, 124, 227, and 228 in place of MATH 121, 122, 223, and 224.
2. Selected students may be invited to take PHYS 123, 124 (Physics and Frontiers I, II Honors) in place of PHYS 121, 122.
3. Engineering physics concentration courses are flexible, but they must be in a specific engineering discipline or study area and approved by an advisor. Possible concentration areas include aerospace engineering, biomedical engineering “hardware,” biomedical engineering “software,” chemical engineering, civil engineering (solid mechanics, structural and geotechnical, environmental), computer science, computer systems hardware, computer systems software, control systems and automation, electrical engineering, macromolecular science, materials science and engineering, mechanical engineering, signal processing, systems analysis and decision making.
4. PHYS 332, PHYS 327/427, EEAP 321, EEAP 420, EMSE 314, or EMSE. Students may choose to fulfill this requirement in their third year.

Bachelor of Science in Mathematics and Physics

<table>
<thead>
<tr>
<th>Units</th>
<th>Fall</th>
<th>Spring</th>
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<tbody>
<tr>
<td>MATH 121</td>
<td>Calculus for Science and Engineering I</td>
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<td>MATH 122</td>
<td>Calculus for Science and Engineering II</td>
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<tr>
<td>or MATH 124</td>
<td>Calculus II</td>
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MATH 223  Calculus for Science and Engineering III  3
or MATH 227  Calculus III  3
MATH 224  Elementary Differential Equations  3
MATH 307  Linear Algebra  3
MATH 308  Introduction to Abstract Algebra  3
MATH 321  Fundamentals of Analysis I  3
MATH 322  Fundamentals of Analysis II  3
MATH 324  Introduction to Complex Analysis  3
PHYS 121  General Physics I - Mechanics  4
or PHYS 123  Physics and Frontiers I - Mechanics  3
PHYS 122  General Physics II - Electricity and Magnetism  4
or PHYS 124  Physics and Frontiers II - Electricity and Magnetism  3
PHYS 221  Introduction to Modern Physics  3
PHYS 310  Classical Mechanics  3
PHYS 313  Thermodynamics and Statistical Mechanics  3
PHYS 331  Introduction to Quantum Mechanics I  3
or PHYS 481  Quantum Mechanics I  3
PHYS 332  Introduction to Quantum Mechanics II  3
or PHYS 482  Quantum Mechanics II  3
Choose PHYS 423 or both PHYS 324 & PHYS 325  3
PHYS 423  Classical Electromagnetism  3
PHYS 324  Electricity and Magnetism I  3
PHYS 325  Electricity and Magnetism II  3
PHYS 472  Graduate Physics Laboratory  3
MP Group 1  3
MP Group 2  3
MP Group 3  3
MP Group 4  3
CHEM 105  Principles of Chemistry I  3
or CHEM 111  Principles of Chemistry for Engineers  3
CHEM 106  Principles of Chemistry II  3
or ENGR 145  Chemistry of Materials  3
ENGR 131  Elementary Computer Programming  3
Advanced Physics Elective  3
SAGES First and University Seminars  10
SAGES Departmental Seminar  3
SAGES Capstone  3
Breadth Requirements  12
Open Electives  16-13
PHED 2 semesters  0
Total Units  126

1. The "MP group" of four courses corresponds to two physics courses and two mathematics courses. The physics courses are chosen from PHYS 250 Computational Methods in Physics, PHYS 349 Methods of Mathematical Physics I, and PHYS 350 Methods of Mathematical Physics II. The mathematics courses are subject to approval by the MP committee and are hence referred to as "approved electives." They may be chosen from the general list of mathematics courses at the 300 level or higher. It may also be possible to choose a course outside the mathematics and physics departments as a substitute in the MP group, subject to approval by the committee.

2. Other science sequence courses may be substituted if approved by the mathematics and physics (MP) committee.

3. Or other approved computational course

4. An advanced physics course to be selected from the following list: PHYS 315 Introduction to Solid State Physics, PHYS 316 Introduction to Nuclear and Particle Physics, PHYS 320 Introduction to Biological Physics, PHYS 326 Physical Optics, PHYS 327 Laser Physics, PHYS 328 Cosmology and the Structure of the Universe, PHYS 336 Modern Cosmology, PHYS 365 General Relativity.

5. Students are encouraged to take either the Math or Physics SAGES departmental seminar and capstone courses but should then take both courses from the same department. The physics departmental seminar consists of 1 credit of PHYS 303 Advanced Laboratory Physics Seminar + PHYS 352 Senior Physics Project Seminar.

6. The breadth requirements include 6 hours of Social Sciences and 6 hours of Arts and Humanities. This may increase by 3 credits if the required Global and Cultural Diversity course is not also one of the breadth requirement courses. Courses required for the BS in mathematics and physics satisfy the 6-credit GER for Natural Sciences and Mathematics as well as the Quantitative Reasoning course requirement.

7. The number of open electives may vary as determined by the degree requirement that the total number of credits be at least 126.

Typical Schedule

**First Year**

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<tr>
<th>Units</th>
<th>Fall</th>
<th>Spring</th>
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<tbody>
<tr>
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<td>or Principles of Chemistry for Engineers (CHEM 111)</td>
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<td><strong>Second Year</strong></td>
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<td>Open Elective</td>
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<td>Classical Mechanics (PHYS 310)</td>
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<td>Elementary Differential Equations (MATH 224)</td>
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<td>Introduction to Abstract Algebra (MATH 308)</td>
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<td>MATH/PHYS Elective</td>
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<td>Thermodynamics and Statistical Mechanics (PHYS 313)</td>
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<td>Fundamentals of Analysis I (MATH 321)</td>
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<td>Introduction to Quantum Mechanics II (PHYS 332) or Quantum Mechanics II (PHYS 482)</td>
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<td>Fundamentals of Analysis II (MATH 322)</td>
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<td>Introduction to Complex Analysis (MATH 324)</td>
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<td>Global and Cultural Diversity Elective</td>
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<td>Classical Electromagnetism (PHYS 423)</td>
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<td>Open Elective</td>
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<td>Graduate Physics Laboratory (PHYS 472)</td>
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<td><strong>Year Total:</strong></td>
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**Total Units in Sequence:** 126

**Department Faculty**

Kathleen Kash, PhD  
(Massachusetts Institute of Technology)  
*Professor and Chair*  
Experimental condensed matter and mesoscopic physics; synthesis of novel semiconductors

Jesse Berezovsky, PhD  
(University of California, Santa Barbara)  
*Assistant Professor*  
Imaging coherent transport in mesoscopic graphene; optical readout of single spin dynamics in a quantum dot; spin dynamics in layered core/shell nanocrystal quantum dots; measurements of nuclear and electron spin at a ferromagnetic/semiconductor interface; spatio-temporal imaging and simulation of magnetization dynamics in ferromagnetic structures

Robert W. Brown, PhD  
(Massachusetts Institute of Technology)  
*Distinguished University Professor and Institute Professor*  
Medical imaging; industrial physics; particle physics theory; cosmology

Edward M. Caner, MS  
(Case Western Reserve University)  
*Instructor*  
Science entrepreneurship

Gary S. Chottiner, PhD  
(University of Maryland)  
*Professor and Director of Undergraduate Studies*  
Experimental physics of surfaces and thin films

Craig Copi, PhD  
(University of Chicago)  
*Instructor*  
Theoretical cosmology; particle physics; astrophysics

Corbin E. Covault, PhD  
(Harvard University)  
*Professor*  
Experimental high-energy astrophysics

Claudia de Rham, PhD  
(University of Cambridge)  
*Assistant Professor*  
Massive gravity and degravitation; Supersymmetric Large Extra Dimensions (SLED); physics of codimension-2 objects; cosmological perturbations

Diana I. Driscoll, PhD  
(Case Western Reserve University)  
*Instructor*  
Introductory physics

Xuan Gao, PhD  
(Columbia University)  
*Professor*  
Experimental condensed matter physics; nanomaterials; electron transport in nanostructures; correlated electrons in low dimensions

Michael Hinczewski, PhD  
(Massachusetts Institute of Technology)  
*Assistant Professor*  
Theoretical Biophysics
Peter J. Kernan, PhD  
(Ohio State University)  
Instructor  
Cosmology; Astrophysics

Walter R. Lambrecht, PhD  
(University of Ghent)  
Professor  
Theoretical condensed matter physics; electronic structure-based physics of materials

Michael A. Martens, PhD  
(Case Western Reserve University)  
Professor  
Medical imaging physics, high energy particle physics, accelerator physics

Harsh Mathur, PhD  
(Yale University)  
Associate Professor  
Condensed matter theory, particle-astrophysics theory

Rolfe G. Petschek, PhD  
(Harvard University)  
Professor  
Theoretical condensed matter; optical materials

Charles Rosenblatt, PhD  
(Harvard University)  
Professor and Ohio Eminent Scholar in Condensed Matter Physics  
Experimental condensed matter; liquid crystals and complex fluids

John E. Ruhl, PhD  
(Princeton University)  
Connecticut Professor  
Experimental astrophysics and cosmology

Kenneth D. Singer, PhD  
(University of Pennsylvania)  
Ambrose Swasey Professor of Physics; Director, Engineering Physics  
Experimental condensed matter physics; nonlinear optics

Glenn D. Starkman, PhD  
(Stanford University)  
Professor; Director, Center for Education and Research in Cosmology and Astrophysics (CERCA)  
Theoretical cosmology, particle physics, astrophysics

Giuseppe Strangi, PhD  
(University of Calabria, Italy)  
Professor and The Ohio Research Scholar in Surfaces of Advanced Materials  
Opto-Plasmonics of Soft Composite Metamaterials; Liquid Crystal Photonics

Cyrus C. Taylor, PhD  
(Massachusetts Institute of Technology)  
Albert A. Michelson Professor in Physics; Dean, College of Arts and Sciences  
Theoretical and experimental particle physics; physics entrepreneurship

Philip L. Taylor, PhD  
(University of Cambridge)  
Distinguished University Professor and Perkins Professor of Physics  
Theory of solids, polymers and other materials

Andrew J. Tolley, PhD  
(University of Cambridge)  
Associate Professor  
Early universe cosmology; dark energy; gravity; extra dimensions; branes

Secondary Faculty

Roger H. French, PhD  
(Massachusetts Institute of Technology)  
F. Alex Nason Professor, Department of Materials Science and Engineering, Case School of Engineering  
Optical materials and technologies; experimental VIS/UV/VUV optical properties and long range interactions

Mark A. Griswold, PhD  
(University of Wuerzburg)  
Associate Professor, Department of Radiology, School of Medicine  
Medical imaging, MRI

Eckhard Jankowsky, PhD  
(Dresden Institute of Technology)  
Associate Professor, Department of Biochemistry, School of Medicine  
Proteins and enzymes; structural biology; regulation of gene expression

R. Earle Luck, PhD  
(University of Texas at Austin)  
Worcester R. and Cornelia B. Warner Professor of Astronomy  
Stellar and galactic chemical evolution; stellar spectrophotometry

Stacy S. McGaugh, PhD  
(University of Michigan)  
Professor, Department of Astronomy  
Galaxy formation and evolution, low surface brightness galaxies, cosmology, dark matter, and gravity

J. Christopher Mihos, PhD  
(University of Michigan)  
Professor, Department of Astronomy  
Galaxy formation and evolution; galaxy interactions; clusters of galaxies; observational and computational astrophysics

Heather Morrison, PhD  
(Australian National University)  
Professor, Department of Astronomy  
Galactic structure; stellar populations; dark matter

Idit Zehavi, PhD  
(Hebrew University of Jerusalem)  
Associate Professor, Department of Astronomy  
Astrophysics

Adjunct Faculty

Daniel S. Akerib, PhD  
(Princeton University)  
Professor  
Experimental astrophysics
James H. Andrews, PhD  
(Case Western Reserve University)  
Adjunct Professor; Professor of Physics, Youngstown State University  
Optical materials

Pierre Carlès, PhD, Habilitation  
(National Polytechnic Institute, Toulouse)  
Adjunct Associate Professor; Associate Professor, Université Pierre et Marie Curie, Paris  
Fluid mechanics; critical behavior; stability

Jeffrey S. Dyck, PhD  
(Case Western Reserve University)  
Adjunct Professor; Professor, John Carroll University  
Experimental condensed matter physics

Karsten Eggert, PhD  
(RWTH Aachen University)  
Adjunct Professor  
Experimental particle physics; cosmic ray physics; diffractive physics; TOTEM experiment at CERN

Hiroyuki Fujita, PhD  
(Case Western Reserve University)  
Adjunct Professor; President and CEO, Quality Electrodynamics and eQED  
Hardware technology in imaging and renewable energies

Evalyn Gates, PhD  
(Case Western Reserve University)  
Adjunct Professor; Executive Director and CEO, Cleveland Museum of Natural History  
Cosmology and particle astrophysics

John T. Giblin, Jr., PhD  
(Yale University)  
Adjunct Associate Professor  
Theoretical cosmology; high energy physics and particle physics; high performance computing and gravitational waves

E. Mark Haacke, PhD  
(University of Toronto)  
Adjunct Professor; Professor, Wayne State University  
Physics of imaging; experimental biophysics

Daeseung Kang, PhD  
(Case Western Reserve University)  
Adjunct Associate Professor  
Experimental condensed matter; liquid crystal

Emmanuelle Lacaze, PhD (Université Denis Diderot - Paris VII), Habilitation (Université Pierre et Marie Curie - Paris VI)  
Professor  
Galaxy formation and evolution, low surface brightness galaxies, cosmology, dark matter, and gravity

Timothy Peshek, PhD  
(Case Western Reserve University)  
Adjunct Assistant Professor  
Experimental semiconductor physics

Jie Shan, PhD  
(Columbia University)  
Associate Professor  
Experimental condensed matter physics; ultrafast optics; terahertz spectroscopy

Irina Shiyanova, PhD  
(Institute of Physics, National Academy of Science of Ukraine)  
Adjunct Associate Professor; Kent Displays, Inc.

Thomas A. Shutt, PhD  
(University of California, Berkeley)  
Professor  
Experimental astrophysics

Shmaryu Shvartsman, PhD  
(Tomsk State University)  
Adjunct Professor; Principal Scientist, ViewRay Inc.  
General physics research and development

Mano Singham, PhD  
(University of Pittsburgh)  
Adjunct Associate Professor; Director, University Center for Innovation in Teaching and Education (UCITE)  
Particle physics; physics teaching

Michael Thompson, PhD  
(Case Western Reserve University)  
Adjunct Assistant Professor; Director of Research, Development, and Advanced Applications, AllTech Medical Systems America  
MRI signal acquisition

Mesfin Tsige, PhD  
(Case Western Reserve University)  
Adjunct Associate Professor  
Theory of solids; polymers and other materials

Visiting Faculty

Cory Christenson, PhD  
(University of Arizona)  
Visiting Assistant Professor  
Experimental condensed matter physics; Quantum optics

Courses

**PHYS 101. Distinguishing Science from Pseudo-Science. 3 Units.**  
There are many current issues arising in popular discourse, ranging from the believability of ESP to reincarnation, to “free energy” machines, which can benefit from simple physical analyses. This course will provide an introduction to the use of basic principles of physics to explore the viability of these ideas. A seminar format will be utilized with specific topics presented by students and by the instructor. Recommended preparation: PHYS 100, PHYS 115, PHYS 121, or PHYS 123.

**PHYS 113A. Principles of Physics Laboratory - Mechanics. 1 Unit.**  
The laboratory portion of first semester introductory physics.

**PHYS 113B. Principles of Physics Laboratory - Electricity and Magnetism. 1 Unit.**  
The laboratory portion of the second semester of physics.
PHYS 115. Introductory Physics I. 4 Units.
First part of a two-semester sequence directed primarily towards students working towards a B.A. in science, with an emphasis on the life sciences. Kinematics; Newton's laws; gravitation; simple harmonic motion; mechanical waves; fluids; ideal gas law; heat and the first and second laws of thermodynamics. This course has a laboratory component. Students may earn credit for only one of the following courses: PHYS 115, PHYS 121, PHYS 123.

PHYS 116. Introductory Physics II. 4 Units.
Electrostatics, Coulomb's law, Gauss's law; capacitance and resistance; DC circuits; magnetic fields; electromagnetic induction; RC and RL circuits; light; geometrical optics; interference and diffraction; special relativity; introduction to quantum mechanics; elements of atomic, nuclear and particle physics. This course has a laboratory component. Students may earn credit for only one of the following courses: PHYS 116, PHYS 122, PHYS 124. Prereq: PHYS 115.

PHYS 121. General Physics I - Mechanics. 4 Units.
Particle dynamics, Newton's laws of motion, energy and momentum conservation, rotational motion, and angular momentum conservation. This course has a laboratory component. Recommended preparation: MATH 121 or MATH 123 or MATH 125 or one year of high school calculus. Students who do not have the appropriate background should not enroll in PHYS 121 without first consulting the instructor. Students may earn credit for only one of the following courses: PHYS 115, PHYS 121, PHYS 123.

PHYS 122. General Physics II - Electricity and Magnetism. 4 Units.
Electricity and magnetism, emphasizing the basic electromagnetic laws of Gauss, Ampere, and Faraday. Maxwell's equations and electromagnetic waves, interference, and diffraction. This course has a laboratory component. Students may earn credit for only one of the following courses: PHYS 116, PHYS 122, PHYS 124. Prereq: PHYS 121 or PHYS 123. Prereq or Coreq: MATH 122 or MATH 124 or MATH 126.

PHYS 123. Physics and Frontiers I - Mechanics. 4 Units.
The Newtonian dynamics of a particle and of rigid bodies. Energy, momentum, and angular momentum conservation with applications. A selection of special frontier topics as time permits, including fractals and chaos, special relativity, fluid mechanics, cosmology, quantum mechanics. This course has a laboratory component. Admission to this course is by invitation only. Students may earn credit for only one of the following courses: PHYS 115, PHYS 121, PHYS 123.

PHYS 124. Physics and Frontiers II - Electricity and Magnetism. 4 Units.
Time-independent and time-dependent electric and magnetic fields. The laws of Coulomb, Gauss, Ampere, and Faraday. Microscopic approach to dielectric and magnetic materials. Introduction to the usage of vector calculus; Maxwell's equations in integral and differential form. The role of special relativity in electromagnetism. Electromagnetic radiation. This course has a laboratory component. Students may earn credit for only one of the following courses: PHYS 116, PHYS 122, PHYS 124. Prereq: PHYS 123. Prereq or Coreq: MATH 122 or MATH 124.

PHYS 166. Physics Today and Tomorrow. 1 Unit.
This course will provide students with an opportunity to learn about the most exciting and timely research areas in physics, as well as other topics germane to being a professional physicist. These discussions will cover fields such as nanoscience, ultrafast optics, exotic materials, biophysics, cosmology, string theory and the role of physicists in developing new technologies. Each week a member of the faculty will meet with students to discuss a topic of current interest, how a physicist approaches the problem, and how physicists interact with others to find a solution. Other topics germane to being a professional physicist will also be discussed, including the relationship among academic, industrial, and governmental laboratories; ethics, and non-traditional careers for students trained in physics.

PHYS 203. Analog and Digital Electronics. 4 Units.
Elements of both analog and digital electronics from the practical viewpoint of the experimental scientist; AC circuits, linear and non-linear operation of op-amps, logic gates, flip-flops, counters, display, memory, transducers, A/D and D/A conversion. Laboratory work involves quantitative investigation of the operation of all these elements, together with projects that explore their combination. Recommended preparation: PHYS 122 or PHYS 124.

PHYS 203A. Analog and Digital Electronics for B.A.. 2 Units.
This course is the first half of the laboratory requirement for the B.A. degree in Physics and is the first half of PHYS 203. Elements of both analog and digital electronics from the practical viewpoint of the experimental scientist; AC circuits, linear and non-linear operation of op-amps, digital circuits including logic gates. This course includes weekly lecture and laboratory work in electronics; it may also include an additional weekly lecture, associated with PHYS 301, on topics such as error analysis, technical writing and oral presentations. Recommended preparation: PHYS 116, PHYS 122, or PHYS 124.

PHYS 204. Advanced Instrumentation Laboratory. 4 Units.
Principles of experimental design; limits of resolution via band-width, thermal noise, background signals; data acquisition and control by computer; computer simulation; signal processing techniques in frequency and time domains, FFT, correlations, and other transform methods; counting techniques. Applications include lock-in amplifiers, digitizing oscilloscopes and data acquisition systems. Recommended preparation: PHYS 203 and PHYS 221.

PHYS 208. Instrumentation and Signal Analysis Laboratory. 4 Units.
AC circuit theory, Fourier series, discrete Fourier series. Fourier integral, discrete Fourier integral; analysis in time and frequency domains, correlation, cross-correlation and other transform techniques; computer control of experiments via IEEE488 interface; advanced instrumentation; DMM, arbitrary waveform generator, multiplexing and digitizing oscilloscopes; experimental design, noise; design, construction, and testing of a lock-in amplifier. Recommended preparation: PHYS 221.

PHYS 221. Introduction to Modern Physics. 3 Units.
Concepts in special relativity, statistical mechanics and quantum mechanics. Applications to atomic structure, and selected topics in nuclear, condensed matter physics, particle physics, and cosmology. Prereq: PHYS 116 or PHYS 122 or PHYS 124.

PHYS 250. Computational Methods in Physics. 3 Units.
PHYS 301. Advanced Laboratory Physics I. 3 Units.
Problem solving approach with a range of available experiments in classical and modern physics. Emphasis on experimental techniques, data and error analysis, and the formal presentation of the work performed. Recommended preparation: PHYS 204. Coreq: PHYS 303.

PHYS 301B. Advanced Laboratory Physics for B.A.. 2 Units.
This course is the second half of the laboratory requirement for the B.A. degree in Physics and is the second half of PHYS 301. Problem solving approach with a range of available experiments in classical and modern physics. Emphasis on experimental technique and data and error analysis, and the formal presentation of the work performed. Recommended preparation: PHYS 203 or PHYS 203A and concurrent enrollment in PHYS 303.

PHYS 302. Advanced Laboratory Physics II. 4 Units.
Several projects using research-quality equipment in contemporary fields of experimental physics. Each requires reading appropriate literature, choosing appropriate instrumentation, performing data acquisition and analysis, and writing a technical paper. Topics include particle counting techniques, neutron activation, gamma-ray spectroscopy, a range of condensed matter experiments including temperature dependent properties between 10 and 350 K, modern optics, ultrahigh vacuum surface science. Recommended preparation: PHYS 301.

PHYS 303. Advanced Laboratory Physics Seminar. 1 Unit.
Students will discuss various issues associated with physics research. These include how to judge the quality of an experiment and data (error analysis), how to present your work in written and oral formats, safety and ethical concerns in the laboratory. Recommended preparation: PHYS 250. Counts as SAGES Departmental Seminar.

PHYS 310. Classical Mechanics. 3 Units.
Lagrangian formulation of mechanics and its application to central force motion, scattering theory, rigid body motion, and systems of many degrees of freedom. Recommended preparation: PHYS 221 and either MATH 223 or MATH 227.

PHYS 313. Thermodynamics and Statistical Mechanics. 3 Units.

PHYS 315. Introduction to Solid State Physics. 3 Units.
Characterization and properties of solids; crystal structure, thermal properties of lattices, quantum statistics, electronic structure of metals and semiconductors. PHYS 415 for graduate students in engineering and science. (May not be taken for departmental credit by graduate students in the Department of Physics.) Prerequisite may be waived with consent of department. Recommended preparation for PHYS 415: PHYS 331. Offered as PHYS 315 and PHYS 415. Prereq: PHYS 331 or PHYS 481.

PHYS 316. Introduction to Nuclear and Particle Physics. 3 Units.
The physics of nuclei and elementary particles; experimental methods used to determine their properties; models and theories developed to describe their structure. Prereq: PHYS 331 or PHYS 481.

PHYS 317. Engineering Physics Laboratory I. 3 Units.
Laboratory course for engineering physics majors. Emphasis is on experimental techniques, data and error analysis, and written and oral presentation of work. Four experiments drawn from classical and modern physics are carried out. These emphasize condensed matter, material and optical physics. Experiments include electric fields, resistivity of materials, optical interference, chaotic systems, and spectroscopy. Design of data analysis systems and software is required. Prereq: PHYS 208. Coreq: PHYS 303.

PHYS 318. Engineering Physics Laboratory II. 4 Units.
Laboratory course for engineering physics majors. Several projects using research-quality equipment in contemporary fields of experimental physics. Open-ended experiments each require reading appropriate literature, designing the experiment, performing data analysis, and writing a technical paper. Topics are drawn from areas of modern physics, and concentrate on condensed matter, material, and optical physics. Prereq: PHYS 317.

PHYS 320. Introduction to Biological Physics. 3 Units.
This course explores the intersection of physics and biology: how do fundamental physical laws constrain life processes inside the cell, shaping biological organization and dynamics? We will start at the molecular level, introducing the basic ideas of nonequilibrium statistical physics and thermodynamics required to describe the fluctuating environment of the cell. This allow us to build up a theoretical framework for a variety of elaborate cellular machines: the molecular motors driving cell movement, the chaperones that assist protein folding, the information-processing circuitry of genetic regulatory networks. The emphasis throughout will be on simple, quantitative models that can tackle the inherent randomness and variability of cellular phenomena. We will also examine how to verify these models through the rich toolbox of biophysical experimental and computational technologies. The course should be accessible to students from diverse backgrounds in the physical and life sciences; we will explain both the biological details and develop the necessary mathematical / physical ideas in a self-contained manner. Prereq: (MATH 122 or MATH 124) and (ENGR 131 or EECS 132).

PHYS 324. Electricity and Magnetism I. 3 Units.
First half of a sequence that constitutes a detailed study of the basics of electromagnetic theory and many of its applications. Electrostatics and magnetostatics of free space, conductors, dielectric and magnetic materials; basic theory illustrated with applications drawn from condensed matter physics, optics, plasma physics, and physical electronics. Prereq: PHYS 116 or PHYS 122 or PHYS 124.

PHYS 325. Electricity and Magnetism II. 3 Units.
(Continuation of PHYS 324.) Electrodynamics, Maxwell's equations, electromagnetic waves, electromagnetic radiation and its interaction with matter, potential formulation of electromagnetism, and relativy. Prereq: PHYS 324.

PHYS 326. Physical Optics. 3 Units.
Geometrical optics and ray tracing, wave propagation, interaction of electromagnetic radiation with matter, interference, diffraction, and coherence. Supplementary current topics from modern optics such as nonlinear optics, holography, optical trapping and optical computing. Prerequisite(s) may be waived with consent of department. Offered as PHYS 326 and PHYS 426. Prereq: PHYS 122 or PHYS 124.
PHYS 327. Laser Physics. 3 Units.
An introduction to theoretical and practical quantum electronics covering topics in quantum optics, laser physics, and nonlinear optics. Topics to be addressed include the physics of two-level quantum systems including the density matrix formalism, rate equations, and semiclassical radiation theory; laser operation including oscillation, gain, resonator optics, transverse and longitudinal modes, Q-switching, modelocking, and coherence; and nonlinear optics including the nonlinear susceptibility, parametric interactions, stimulated processes, and self-action. Recommended preparation for PHYS 427: PHYS 331 or PHYS 481. Offered as PHYS 327 and PHYS 427. Prereq: PHYS 331 or PHYS 481.

PHYS 328. Cosmology and the Structure of the Universe. 3 Units.

PHYS 329. Independent Study. 1 - 4 Unit.
An individual reading course in any topic of mutual interest to the student and the faculty supervisor.

PHYS 331. Introduction to Quantum Mechanics I. 3 Units.
Quantum nature of energy and angular momentum, wave nature of matter, Schroedinger equation in one and three dimensions; matrix methods; Dirac notation; quantum mechanical scattering. Two particle wave functions. Prereq: PHYS 221.

PHYS 332. Introduction to Quantum Mechanics II. 3 Units.
Continuation of PHYS 331. Spin and fine structure; Dirac equation; symmetries; approximation methods; atomic and molecular spectra; time dependent perturbations; quantum statistics; applications to electrons in metals and liquid helium. Prereq: PHYS 331.

PHYS 336. Modern Cosmology. 3 Units.
An introduction to modern cosmology and an exploration of current topics in the field. The first half of the course will cover the mathematical and physical basis of cosmology, while the second will delve into current questions and the observations that constrain them. Offered as PHYS 336 and PHYS 436. Prereq: PHYS 221.

PHYS 339. Seminar. 1 - 3 Unit.
Conducted in small sections with presentation of papers by students and informal discussion. Special problem seminars and research seminars offered according to interest and need, often in conjunction with one or more research groups.

PHYS 349. Methods of Mathematical Physics I. 3 Units.
Analysis of complex functions: singularities, residues, contour integration; evaluation and approximation of sums and integrals; exact and approximate solution of ordinary differential equations; transform calculus; Sturm-Liouville theory; calculus of variations. Additional work required for graduate students. Offered as PHYS 349 and PHYS 449. Prereq: PHYS 224.

PHYS 350. Methods of Mathematical Physics II. 3 Units.
(Continuation of PHYS 349/449.) Special functions, orthogonal polynomials, partial differential equations, linear operators, group theory, tensors, selected special topics. Additional work required for graduate students. Prereq: PHYS 349.

PHYS 351. Senior Physics Project. 2 Units.
A two semester course required for senior BS and BA physics majors. Students pursue a project based on experimental, theoretical or teaching research under the supervision of a physics faculty member, a faculty member from another CWRU department or a research scientist or engineer from another institution. A departmental Senior Project Committee must approve all project proposals and this same committee will receive regular oral and written progress reports. Final results are presented at the end of the second semester as a paper in a style suitable for publication in a professional journal as well as an oral report in a public symposium. Counts as SAGES Senior Capstone. Prereq: PHYS 303. Coreq: PHYS 352.

PHYS 352. Senior Physics Project Seminar. 1 Unit.
This two semester seminar is taken concurrently with the student's two semester senior project. Students meet weekly to discuss their projects and the research experience. The class will include discussions about professional issues such as ethics, graduate school, jobs, funding, professional organizations, public obligations, writing and speaking. Assignments include proposals, progress reports and posters. Counts as SAGES Departmental Seminar. Coreq: PHYS 351 or PHYS 353.

PHYS 353. Senior Engineering Physics Project. 2 Units.
A two semester course required for BSE Engineering Physics majors. Students are expected to complete a research project in their concentration area under the supervision of a faculty member in science, engineering, or, with approval, a researcher at another institution or company. The project may be calculational, experimental or theoretical, and will address both the underlying physics and appropriate engineering and design principles. A program Senior Project Committee must approve all project proposals and will receive regular oral and written progress reports. Final results are presented at the end of the second semester as a paper in a style suitable for publication in a professional journal as well as an oral report in a public symposium. Counts as SAGES Senior Capstone. Prereq: PHYS 318. Coreq: PHYS 352.

PHYS 365. General Relativity. 3 Units.
This is an introductory course in general relativity. The techniques of tensor analysis will be developed and used to describe the effects of gravity and Einstein's theory. Consequences of the theory as well as its experimental tests will be discussed. An introduction to cosmology will be given. Additional work required for graduate students. Offered as PHYS 365 and PHYS 465.

PHYS 390. Undergraduate Research in Physics. 3 - 6 Units.
Research conducted under the supervision of a faculty member in the Department of Physics. Arrangements must be made with a faculty member and a written description of these arrangements must be submitted to and approved by the department before a permit will be issued to register for this course. A final report must be supplied to the department at the end of the semester.

PHYS 413. Classical and Statistical Mechanics I. 3 Units.
An integrated approach to classical and statistical mechanics. Lagrangian and Hamiltonian formulations, conservation laws, kinematics and dynamics, Poisson brackets, continuous media, derivation of laws of thermodynamics, the development of the partition function. To be followed by PHYS 414.

PHYS 414. Classical and Statistical Mechanics II. 3 Units.
A continuation of PHYS 413. Noninteracting systems, statistical mechanics of solids, liquids, gases, fluctuations, irreversible processes, phase transformations. Recommended preparation: PHYS 413 or consent of department.
PHYS 415. Introduction to Solid State Physics. 3 Units.
Characterization and properties of solids; crystal structure, thermal properties of lattices, quantum statistics, electronic structure of metals and semiconductors. PHYS 415 for graduate students in engineering and science. (May not be taken for departmental credit by graduate students in the Department of Physics.) Prerequisite may be waived with consent of department. Recommended preparation for PHYS 415: PHYS 331. Offered as PHYS 315 and PHYS 415.

PHYS 423. Classical Electromagnetism. 3 Units.

PHYS 426. Physical Optics. 3 Units.
Geometrical optics and ray tracing, wave propagation, interaction of electromagnetic radiation with matter, interference, diffraction, and coherence. Supplementary current topics from modern optics such as nonlinear optics, holography, optical trapping and optical computing. Prerequisite(s) may be waived with consent of department. Offered as PHYS 326 and PHYS 426.

PHYS 427. Laser Physics. 3 Units.
An introduction to theoretical and practical quantum electronics covering topics in quantum optics, laser physics, and nonlinear optics. Topics to be addressed include the physics of two-level quantum systems including the density matrix formalism, rate equations, and semiclassical radiation theory; laser operation including oscillation, gain, resonator optics, transverse and longitudinal modes, Q-switching, mode-locking, and coherence; and nonlinear optics including the nonlinear susceptibility, parametric interactions, stimulated processes, and self-action. Recommended preparation for PHYS 427: PHYS 331 or PHYS 481. Offered as PHYS 327 and PHYS 427.

PHYS 428. Cosmology and the Structure of the Universe. 3 Units.

PHYS 431. Physics of Imaging. 3 Units.
Description of physical principles underlying the spin behavior in MR and Fourier imaging in multi-dimensions. Introduction of conventional, fast, and chemical-shift imaging techniques. Spin echo, gradient echo, and variable flip-angle methods. Projection reconstruction and sampling theorems. Bloch equations, T1 and T2 relaxation times, rf penetration, diffusion and perfusion. Flow imaging, MR angiography, and functional brain imaging. Sequence and coil design. Prerequisite may be waived with consent of instructor. Recommended preparation: PHYS 122 or PHYS 124 or EBME 410. Offered as EBME 431 and PHYS 431.

PHYS 436. Modern Cosmology. 3 Units.
An introduction to modern cosmology and an exploration of current topics in the field. The first half of the course will cover the mathematical and physical basis of cosmology, while the second will delve into current questions and the observations that constrain them. Offered as PHYS 336 and PHYS 436.

PHYS 441. Physics of Condensed Matter I. 3 Units.
Crystal structure, x-ray diffraction, band theory and applications. Free electron theory of metals and electrons in magnetic fields.

PHYS 442. Physics of Condensed Matter II. 3 Units.
Continuation of PHYS 441. Lattice vibrations, thermal properties of solids, semiconductors, magnetic properties of solids, and superconductivity. Prerequisite may be waived with consent of department. Recommended preparation: PHYS 441.

PHYS 449. Methods of Mathematical Physics I. 3 Units.
Analysis of complex functions: singularities, residues, contour integration; evaluation and approximation of sums and integrals; exact and approximate solution of ordinary differential equations; transform calculus; Sturm-Liouville theory; calculus of variations. Additional work required for graduate students. Offered as PHYS 349 and PHYS 449.

PHYS 451. Empirical Foundations of the Standard Model. 3 Units.
The experimental basis for modeling the electroweak and strong interactions in terms of fundamental fermions, quarks and leptons, and gauge bosons, photons, the weak bosons, and gluons; particle accelerators and detection techniques; phenomenology of particle reactions, decays and hadronic structure; space, time and internal symmetries; symmetries; symmetry breaking.

PHYS 460. Advanced Topics in NMR Imaging. 3 Units.
Frontier issues in understanding the practical aspects of NMR imaging. Theoretical descriptions are accompanied by specific examples of pulse sequences, and basic engineering considerations in MRI system design. Emphasis is placed on implications and trade-offs in MRI pulse sequence design from real-world versus theoretical perspectives. Recommended preparation: EBME 431 or PHYS 431. Offered as EBME 460 and PHYS 460. Prereq: Graduate standing or Undergraduate with Junior or Senior standing and a cumulative GPA of 3.2 or above.

PHYS 465. General Relativity. 3 Units.
This is an introductory course in general relativity. The techniques of tensor analysis will be developed and used to describe the effects of gravity and Einstein's theory. Consequences of the theory as well as its experimental tests will be discussed. An introduction to cosmology will be given. Additional work required for graduate students. Offered as PHYS 365 and PHYS 465.

PHYS 472. Graduate Physics Laboratory. 3 Units.
A series of projects designed to introduce the student to modern research techniques such as automated data acquisition. Students will be assessed as to their individual needs and a sequence of projects will be established for each individual. Topics may include low temperature phenomena, nuclear gamma ray detection and measurement and optics.

PHYS 481. Quantum Mechanics I. 3 Units.
Quantum mechanics with examples of applications. Schroedinger method; matrix and operator methods. Approximation methods including WKB, variational and various perturbation methods. Applications to atomic, molecular and nuclear physics including both bound states and scattering problems. Applications of group theory to quantum mechanics.

PHYS 482. Quantum Mechanics II. 3 Units.
Continuation of PHYS 481, including quantum field theory. Prerequisite may be waived with consent of department. Recommended preparation: PHYS 481 or consent of department.
PHYS 491. Modern Physics for Innovation I. 3 Units.
The first half of a two-semester sequence providing an understanding of physics as a basis for successfully launching new high-tech ventures. The course will examine physical limitations to present technologies, and the use of physics to identify potential opportunities for new venture creation. The course will provide experience in using physics for both identification of incremental improvements, and as the basis for alternative technologies. Case studies will be used to illustrate recent commercially successful (and unsuccessful) physics-based venture creation, and will illustrate characteristics for success.

PHYS 492. Modern Physics for Innovation II. 3 Units.
Continuation of PHYS 491, with an emphasis on current and prospective opportunities for Physics Entrepreneurship. Longer term opportunities for Physics Entrepreneurship in emerging areas including, but not limited to, nanoscale physics and nanotechnology; biophysics and applications to biotechnology; physics-based opportunities in the context of information technology. Recommended preparation: PHYS 491.

PHYS 493. Feasibility and Technology Analysis. 3 Units.
This course provides the tools scientists need to determine whether a technology is ready for commercialization. These tools include (but are not limited to): financial analysis, market analysis, industry analysis, technology analysis, intellectual property protection, the entrepreneurial process and culture, an introduction to entrepreneurial strategy and new venture financing. Deliverables will include a technology feasibility analysis on a possible application in the student's scientific area. Offered as BIOL 493, CHEM 493, and PHYS 493.

PHYS 494. Technology-Based Venture Creation. 3 Units.
This course provides the advanced tools needed to develop, articulate, and launch a venture plan for a technology identified as likely to be successful through a feasibility analysis. Additional topics include: entrepreneurial strategy, communication, sales, negotiation, entrepreneurial finance, and leadership in an entrepreneurial environment. Guest speakers will be featured in nearly every class session. Prereq: BIOL 493 or CHEM 493 or PHYS 493.

PHYS 539. Special Topics Seminar. 1 - 3 Unit.
Individual or small group instruction on topics of interest to the department. Topics include, but are not limited to, particle physics, astrophysics, optics, condensed matter physics, biophysics, imaging. Several such courses may run concurrently.

PHYS 566. Cosmology. 3 Units.
Introduction to our current understanding of the origin and evolution of the Universe and connection between our understanding of elementary particle physics and cosmology. Specific topics will include: General Parameters of Cosmology; Expansion, Lifetime, and Density of the Universe. The Early Universe, Constraints on Elementary Particles, Dark Matter and Dark Energy, Nucleosynthesis, Cosmic Microwave Background, Inflation, Stellar Evolution, Gravitational Waves, Baryogenesis. Some background in general relativity and particle physics phenomenology is recommended.

PHYS 581. Quantum Mechanics III. 3 Units.

PHYS 591. Gauge Field Theory I. 3 Units.
Noether's theorem, symmetries and conserved currents, functional integral techniques, quantization, Feynman rules, anomalies, QED, electroweak interactions, QCD, renormalization, renormalization group, asymptotic freedom and assorted other topics. Prereq: PHYS 581.

PHYS 592. Gauge Field Theory II. 3 Units.
(See PHYS 591.) Recommended preparation: PHYS 591.

PHYS 601. Research in Physics. 1 - 9 Unit.

PHYS 651. Thesis M.S.. 1 - 9 Unit.

PHYS 666. Frontiers in Physics. 0 Units.
Weekly colloquia given by eminent physicists from around the world on topics of current interest in physics.

PHYS 701. Dissertation Ph.D.. 1 - 9 Unit.
Prereq: Predoctoral research consent or advanced to Ph.D. candidacy milestone.

Department of Political Science

Political science is primarily concerned with how governments act and how they are controlled; it examines the ways in which governments relate to each other, citizen-state relations, and the exercise of political power. Faculty specialties in the department include American politics and governmental institutions; elections and political parties in the United States and abroad; the creation and revolutionizing of political systems; public policy analysis, especially environmental, economic, budget, and health policies; international relations, with special focuses on international political economy and international organizations; religious and ethnic conflict; the politics of gender; political strategies; research methods; and comparative politics, with various regional concentrations. In its programs leading to the BA, MA, and PhD, the department makes a strong effort to relate the study of politics to students’ needs and concerns and to reflect in its courses both the excitement and seriousness of real-world politics.

The study of political science can build a foundation for many types of future employment. Many political science majors are preparing for graduate study or law school. Others intend to pursue careers in journalism, teaching, or public administration, or in private industry and business. Both the public and private sectors hold career possibilities for the political science major.

Undergraduate Programs

Major

The major in political science leads to the Bachelor of Arts degree. The major requires 30 hours of course work, distributed as follows:

Required Courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>POSC 109</td>
<td>The U.S. Political System</td>
<td>3</td>
</tr>
<tr>
<td>POSC 160</td>
<td>Introduction to Comparative Politics</td>
<td>3</td>
</tr>
<tr>
<td>POSC 172</td>
<td>Introduction to International Relations</td>
<td>3</td>
</tr>
<tr>
<td>Six POSC courses at the 300 level</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>POSC 396</td>
<td>Senior Project SAGES Capstone</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Units: 30

Students select courses based on their specific interests, with approval of the faculty advisor. No more than six hours of independent study (i.e., POSC 395 Special Projects and/or POSC 396 Senior Project SAGES...
Capstone) may count toward the major. Independent study completed through the Washington Center program is excluded from this limitation.

**Departmental Honors**

Majors who maintain a grade point average of at least 3.3 overall on completion of senior year and 3.7 in political science courses, and who earn a grade of A in POSC 396, will be eligible to be nominated to receive their degrees “with Honors in Political Science.”

**Integrated Graduate Studies**

The Integrated Graduate Studies (IGS) Program (http://bulletin.case.edu/undergraduatestudies/gradprofessional/#accelerationintowardgraduatedegreestext) in political science offers students the opportunity to earn an M.A. in addition to their B.A., within the usual period of undergraduate study or with a small amount of extra time. Students should notify the department of their interest no later than the beginning of the first semester of the junior year. Further application procedures are posted on the department's website. Upon completion of 90 undergraduate hours, the student must have satisfied all general requirements for the BA, including at least 21 hours in the political science major and the General Education Requirements, and must have a 3.5 grade point average in political science courses and 3.3 overall. If admitted to the IGS program, the student will take 30 hours of graduate-level political science courses during the senior year, adhering to the departmental regulations governing the master's degree program. If completed successfully, these hours will count simultaneously toward both degrees in political science.

The BA will be awarded upon completion of all requirements for that degree, including total hours. The MA will be awarded upon successful completion of the 30 hours of graduate-level courses and the MA examination or thesis.

**Minor**

**Political Science**

A minor in political science consists of 15 hours (five courses) in the department, of which 9 hours must be at the 300 level. An elected minor sequence must be approved by a political science faculty advisor.

**Public Policy**

A minor in public policy is available to undergraduates in the College of Arts and Sciences and to undergraduates in the economics and management programs in the Weatherhead School of Management. Please see the Public Policy Program's (p. 291) section of the bulletin for details.

**Graduate Programs**

**Master of Arts**

Applicants to the Master of Arts program in political science are required to submit their undergraduate transcripts and three letters of recommendation from former instructors. The admission requirements also include a minimum score of 500 on the verbal and quantitative segments of the Graduate Record Examination (GRE) and 4.5 on the analytical section. The department strongly prefers that applicants have a minimum GPA of 3.2 overall and a minimum GPA of 3.4 in political science courses. For students from other countries, the requirements are a minimum score of 550 on the paper version of the Test of English as a Foreign Language (TOEFL), or at least 215 on the computer version of the TOEFL; the minimum GRE scores indicated above; and transcripts of all undergraduate study, indicating completion of a Bachelor of Arts or Bachelor of Science degree program.

In addition to coursework, students complete the Master of Arts program in political science either through a thesis, Graduate School Plan A, or a comprehensive examination, Graduate School Plan B, as described below.

The Master of Arts in political science is a broadly based program in which the student is expected to acquire and exhibit general knowledge and skills. Therefore, within the 30 hours of graduate-level course work (400 level and above) required for the master's, 12 hours must be distributed as follows:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>A class in the area of American government and politics</td>
<td>3</td>
</tr>
<tr>
<td>A class in the area of comparative politics</td>
<td>3</td>
</tr>
<tr>
<td>A class in the area of international relations</td>
<td>3</td>
</tr>
<tr>
<td>POSC 449 Political Science Research Methods</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Units</strong></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>

Students who receive permission (due to special circumstances) from the graduate coordinator may take an alternative research methods course outside the department.

Among the remaining 18 hours of electives, the student will select courses to fit a plan to complete a thesis (in Plan A below) or complete an examination in two fields (Plan B below), as approved by the graduate studies director. A maximum of 9 hours may be taken outside the Department of Political Science, with prior approval from the graduate studies director, for specialized work related to the master's degree for which no political science course is appropriate. A maximum of nine hours of independent study (POSC 601 Individual Investigation) may count toward the degree.

A minimum grade point average of 3.0 must be maintained throughout the Master of Arts program. A master's student who fails to maintain a GPA of 3.0 will be placed on academic probation for one semester. If the GPA is not returned to the 3.0 minimum by the end of the probationary semester, the student will be separated from further study in the department.

**Plan A: MA Thesis**

An MA Thesis should be a major research paper equivalent to at least six hours of registration. Students shall register for POSC 651 Thesis M.A., which will count towards the 30 hours of coursework required for completion of the MA. An MA Thesis will be read by a committee of three members of the faculty, and defended in an oral examination with the faculty committee. The committee shall vote on approval of the thesis after the oral defense. A majority vote will suffice to approve the thesis.

Students must define their thesis topic no later than the last week of the semester before the semester in which they expect to defend the thesis. The thesis supervisor will be selected by mutual agreement between the student and the faculty member who agrees to supervise. The topic must be defined before the student registers for POSC 651 Thesis M.A., and a permit for the course must be issued by the faculty supervisor. The student must prepare a prospectus describing the research question and research plans before the permit can be issued. The prospectus must be approved by both the faculty supervisor and the department's graduate studies director. The director shall appoint the two other members of the
examination committee. The graduate studies director will also schedule the oral defense, with assistance from the department staff.

**Plan B: MA Examination**

For the MA Examination, students should be able to explain, critique, integrate and apply the arguments of leading works in two out of the three fields of American Politics and Government, Comparative Politics, and International Relations. The examination is a written test of five hours’ duration, with 150 minutes for each of the chosen subfields. A student who chooses Plan B must request scheduling of the examination upon completion of no fewer than 30 hours and no more than 42 hours of master’s-level course work.

The examination is administered in a controlled, closed-book setting. The department maintains, on its website, MA reading lists of major scholarly works within the three fields listed above, and test questions will be based upon an expectation that the student has thoroughly studied – whether in or outside of classes – the works designated on those lists. Faculty members within each subfield write the questions for that subfield, which are then assembled by the graduate studies director, who is responsible for scheduling the exam.

The student must notify his or her faculty advisor and the graduate studies director of intent to take the exam, and the two subfields chosen, at least six weeks before he or she wishes to take it. Each section of the examination will be graded by two members of the faculty. The two faculty members must agree that the student has performed acceptably on that section of the examination in order for the student to pass on that section. The student must pass both sections to pass the exam.

Grading for the exam is Honors, Pass, or Fail. If the exam is failed, a student will have one calendar year in which to retake the exam. We expect the student will need at least one semester to prepare for retaking the exam. During the interim, the political science faculty may require the student to take additional classes to help address the concerns raised by the failed exam segment or segments. If the student does not pass the exam on a second attempt then, regrettfully, she or he will be separated from the department. Please note that university regulations require that students be registered for coursework during any semester during which the MA Exam is taken. A student who does not enroll in other courses should enroll for one hour of EXAM 600, “Comprehensive Exam” (noncredit).

**Doctor of Philosophy**

Requirements for admission to the Doctor of Philosophy program in political science are the same as for admission to the Master of Arts program, with the following additions. The department strongly prefers that applicants without an MA in political science have a minimum GPA of 3.2 overall and a minimum GPA of 3.4 in undergraduate political science courses, and that applicants with an MA degree in political science have a minimum GPA of 3.4 overall in their MA work. Because the department faculty is small, applicants should determine, prior to applying, whether one or more members of the department faculty are active in the applicant’s field of interest. PhD applications must specify the applicant’s field(s) of interest, as the Graduate Studies Committee will not recommend the admission of an applicant where the department faculty cannot support the applicant’s proposed course of study. Students who are accepted into the department’s MA program and then decide they would like to earn the PhD are expected to apply to the PhD program and meet the admission requirements. All PhD students must complete 45 hours of graduate-level courses, plus at least 18 hours of master’s-level course work.

POSC 701 Dissertation Ph.D. credit. The required 45 hours of doctoral courses taken before dissertation credits must be distributed as follows:

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Total Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 hours in a primary subfield (American, comparative, or international relations)</td>
<td>12</td>
</tr>
<tr>
<td>9 hours in secondary subfield (one of the remaining two fields)</td>
<td>9</td>
</tr>
<tr>
<td>6 hours in the remaining subfield</td>
<td>6</td>
</tr>
<tr>
<td>6 hours in Research Methods:</td>
<td>6</td>
</tr>
<tr>
<td>POSC 449 Political Science Research Methods</td>
<td>12</td>
</tr>
<tr>
<td>12 hours of electives</td>
<td>12</td>
</tr>
<tr>
<td><strong>Total Units</strong></td>
<td><strong>45</strong></td>
</tr>
</tbody>
</table>

A maximum of 9 hours of independent study (POSC 601 Individual Investigation) may be undertaken. University regulations require PhD students to spend at least one academic year in full-time residence (two consecutive regular semesters with a minimum of 9 hours’ registration each semester).

Doctoral students whose MA in political science has been certified, and doctoral students with an MA in political science from Case Western Reserve, need complete only 18 of the 45 hours of doctoral coursework. The graduate studies director will set distribution requirements on an individual basis, reflecting the coursework completed for the MA. Doctoral students without a completed MA must pass the MA examination. They must take the examination upon completion of no fewer than 30 hours and no more than 36 hours of coursework. A student who does not pass this examination may not continue in the PhD program. See the description of the MA examination above for further information.

Upon completion of 45 hours of coursework, the student must pass the PhD comprehensive examinations in his or her primary and secondary subfields. After passing the examinations, a student must complete a dissertation, typically 150-400 pages in length, that draws on the student’s original research to make a contribution to the field of political science.

**Dual JD/MA**

Students accepted to the School of Law may pursue a Master of Arts in Political Science in conjunction with their JD degree. Completion of the program requires 97 hours of coursework, and so would be expected to require seven semesters. Students wishing to enroll in the dual-degree program must be separately admitted to each program, but the department will waive the GRE requirement and accept the LSAT within the admissions process. Students must complete a total of 21 hours of credit within the political science department, including at least three credit hours in American politics, comparative politics, international relations, and research methods. Dual-degree students will normally begin study in the law school and defer enrollment in the MA program until their second year. They must pass the MA comprehensive examination upon completion of their political science coursework.

**Department Faculty**

Karen Beckwith, PhD  
(Syracuse University)  
*Flora Stone Mather Professor and Chair*  
Politics of gender; mass political participation; comparative political movements; democracy and representation
Adjunct Faculty

Lev Gonick, PhD
(York University, Toronto)
Adjunct Professor
Comparative historical international political economy; technology and government

Karl Kaltenthaler, PhD
(Washington University)
Adjunct Professor
Comparative politics, political behavior/public opinion, political extremism and violence, political economy, Europe

Andrew M. Lucker, PhD
(Case Western Reserve University)
Adjunct Assistant Professor
American government; state politics and government; history of political science

Howard Maier, PhD
Adjunct Assistant Professor

Courses

POSC 109. The U.S. Political System. 3 Units.
This course provides an overview of governmental institutions and processes in the United States, the political forces that combine to shape them, and how we might best understand the system that government and politics create.

POSC 160. Introduction to Comparative Politics. 3 Units.
Comparative politics is the study of processes and institutions within countries. Prompted by real-world puzzles, comparativists investigate broad, theoretical questions such as: What constitutes a revolution, and why do revolutions occur? How does one country become more democratic than another? Why do relations between some ethnic groups turn violent? This course introduces students to some of the central puzzles and theories of comparative politics in order to help them better understand world events.

POSC 172. Introduction to International Relations. 3 Units.
Why do countries fight wars? Can nuclear proliferation be curtailed? Does trade help developing countries or harm them? This survey of the field of International Relations examines "big questions" in world politics. It introduces themes including the rise, development and changes of the nation-state system; patterns and causes of international conflict and cooperation; international law, organizations, and transnational institutions; the roles of both state and non-state actors in international politics; and the methods used to understand this field.

POSC 301. Decision-Making in American Cities. 3 Units.
Localities are the primary interface with government and provide the basic psychological place identification for most Americans. The course will explore this assertion in the context of urban America today. How are decisions made in cities? Who shapes these decisions and why? What role is played by shifting demographics, race, and poverty? What can the individual do to influence local decision-making? Offered as POSC 301 and POSC 401.
POSC 302. State Politics and Policy. 3 Units.
State governments may make more decisions that affect the life of an average citizen than does the federal government. The study of state politics and policy includes the different ways states organize the basic parts of American political systems (such as legislatures, executives, courts and parties); how state cultures, economies, and other factors shape how political institutions work; institutions of state governance that do not exist at the national level (such as the initiative and referendum); and the continual contest between state and federal governments to control policy, shift costs, and avoid blame. Offered as POSC 302 and POSC 402.

POSC 306. Interest Groups in the Policy Process. 3 Units.
Introduction to the institutions and processes that make up the political environment of nonprofit and other organizations in the United States, beginning with an examination of the role of civil society in a democracy and continuing with the framing of issues, role of political entrepreneurs and organized interests, elections, the legislative process and strategies for influencing it, and the roles of executive institutions and the courts. Offered as POSC 306 and POSC 406.

POSC 308. The American Presidency. 3 Units.
The sources of, strategies of, and restraints on presidential leadership in the United States. Emphasis on problems of policy formation, presidential relations with Congress and executive agencies, and the electoral process. Offered as POSC 308 and POSC 408.

POSC 310. The Legislative Process. 3 Units.
Legislative, representative, and other functions of Congress and state legislatures; legislative relations with the executive and with private interests; powers and limitations of the legislature as a policy-making institution. Offered as POSC 310 and POSC 410.

POSC 319. Politics and Money. 3 Units.
One of the most famous definitions of politics comes from Harold Laswell, who described it as the struggle over “who gets what, when, how.” Money is at the center of most political conflict. It is a resource, a motivation, and an end unto itself. This course will examine the role of money in politics, with particular emphasis on American politics. We will discuss the role of money in elections, in the policy-making process, and what it means for representation. The course will begin with the question of the role that financial consideration play in public opinion and voting behavior. We will then address the role that money plays in election results, both in terms of its role in financing campaigns, and the relationship between the state of the economy and election results. Finally, we will discuss the policy-making process. In that context, we will address the role that interest groups play in the process, and how the quest for economic benefits for one’s constituency motivates the behavior of elected officials. We will conclude by discussing how policy changes at the systematic level occur and the influence that various groups have on policy outcomes. Offered as POSC 319 and POSC 419.

POSC 320. The U.S. Midterm Elections. 3 Units.
Analysis of the midterm elections in the United States. Covers congressional and state elections in all regions, focusing on the issues, personalities, campaign strategies, and voter trends in this key electoral battle held between presidential elections. Offered every four years in conjunction with the election cycle. Offered as POSC 320B and POSC 420B.

POSC 321. News Media and Politics. 3 Units.
Analysis of the political role of the news media in American government and politics. Examines the fascinating relationship between reporters and politicians. Covers the overall structure and legal position of the media as well as the media’s impact on the American political system. Offered as POSC 321 and POSC 421.

POSC 322. Political Movements and Political Participation. 3 Units.
Political Movements and Political Participation is concerned with the variety of ways citizens engage in collective activism in the United States and across national boundaries, and with the conditions under which citizens identify common concerns and join together in political movements to bring about change. The course begins with an examination of three general bodies of theory and research on political movements: resource mobilization, political opportunity structures, and cultural framing. We will also investigate frameworks of political participation for understanding the relationships among different expressions of collective activism and representation. In the context of these sometimes competing theories, we will consider 1) the conditions under which political movements are likely to emerge, as well as the circumstances in which collective political action is precluded; 2) how citizens come to recognize collective grievances and shared political identities; 3) the strategies and tactics of organized movements, and their likelihood of political success; and 4) the relationship between political movements, political parties, and the state. Offered as POSC 322 and POSC 422.

POSC 323. Judicial Politics. 3 Units.
Rejecting the view that judges mechanically apply the law, the study of judicial politics seeks to understand the behavior of judges as political actors with policy goals. Topics include judicial selection and socialization, judicial policy change, judicial strategy (especially the strategic interaction of judges on multi-judge panels), the interaction of courts in hierarchical judicial systems, the policy impact of judicial decisions, and the courts’ interactions with coordinate branches of government (the executive, Congress, state governments, state courts). Primary focus will be on the federal judiciary, with some discussion of state judicial systems. Offered as POSC 323 and POSC 423.

POSC 325. American Constitutional Law. 3 Units.
An introductory survey of U.S. constitutional law. Special attention given to the historical, philosophical, and political dimensions of landmark Supreme Court cases. Judicial review, federalism, separation of powers, due process, and equal protection. Supreme Court’s involvement in major political controversies: the New Deal, abortion, physician-assisted suicide, school desegregation, and affirmative action. Offered as POSC 325 and POSC 425.

POSC 326. Constitutions in Practical Politics. 3 Units.
Overview of ancient Greek and Roman constitution-making, medieval principles, emergence of modern constitutionalism, and the constitutionalist vision of the American and French Revolutions. Examination of contemporary constitutional issues and developments in countries such as Canada, France, Germany, Great Britain, Ethiopia, India, and the United States. Offered as POSC 326 and POSC 426.

POSC 327. Civil Liberties in America. 3 Units.
Supreme Court’s interpretation of the First Amendment: liberty of religion through the establishment and free exercise clauses, freedoms of speech and the press, of assembly and association. The "pure tolerance" view examined against subversive speech, "fighting words," libel, and obscenity. Survey of content-neutral regulation, symbolic expression, and current efforts to limit expression (campus speech codes and the feminist anti-pornography movement). Offered as POSC 327 and POSC 427.
POSC 328. Topics in Civil Liberties. 3 Units.
Rights of the accused as outlined in the Fourth, Fifth, Sixth, and Eighth Amendments. Topics covered are (1) arrests, searches, and seizures, (2) the privilege against compelled self-incrimination, (3) the rights to counsel, confrontation, and jury trial, and (4) the prohibition against cruel and unusual punishments. Case-specific approach but presents interplay of history, philosophy, and politics as background of each topic. Offered as POSC 328 and POSC 428.

POSC 334. Violence and the Political System. 3 Units.
Empirical analysis of various theories advanced in the cross-cultural explanation of factors which cause and mediate the occurrence of violence--revolutions, terrorism, and civil disorder--within the political system. Offered as POSC 334 and POSC 434.

POSC 341. Elections, Voters, and Political Parties. 3 Units.
Examination of American political parties, their activities, organization, characteristics, and functions. Candidate strategies and electoral history viewed within the context of voter orientations and predispositions, stressing linkages between citizen and party and between party and government. Offered as POSC 341 and POSC 441.

POSC 342. Water. 3 Units.
This seminar will explore the history of the meaning of water—that is, the social, cultural, and/or political significance placed on water by individuals and governments in different times and places. It will also examine how humans have acted upon water, and how it has acted upon humans, with great consequences for human life. This seminar will look at the history of water in the context of science, technology, and society; public health; political science; and environmental history. Case studies will be drawn from a wide chronological and geographical range; from the ancient world to Renaissance Italy, nineteenth-century India, modern Britain, Egypt, and the U.S. The course provides a wide perspective on the themes of the history of human-water interactions, but will also focus closely on some critical cases. Seminar participants will write a research paper on the topic of their choice in the environmental history of water. Offered as: HSTY 342, HSTY 442, POSC 342, POSC 442.

POSC 343. Public Opinion and American Democracy. 3 Units.
Examination of theories, concepts, and empirical research related to attitudes and the political behavior of mass publics. Offered as POSC 343 and POSC 443.

POSC 346. Women and Politics. 3 Units.
Women and Politics involves a critical examination of the impact of gender on the forms and distributions of power and politics, with primary reference to the experience of women in the United States. Major concerns of the course include what we mean by "sex," "gender," and "politics"; the relationship between women and the state; how women organize collectively to influence state policies; and how the state facilitates and constrains women’s access to and exercise of political power. The course is organized around four foci central to the study of women and politics. The first section of the course focuses on what we mean by "women," "gender," and "politics." In this section, we will consider how these concepts intersect and the ways in which each may be used to deepen our understanding of the workings of governments and political systems, and of women’s relative political powerlessness. The second section of the course employs these concepts to understand the (re)emergence of the US feminist movement, its meanings, practices, and goals, and its transformation across US political history. In the third section, we turn to conventional electoral politics, focusing on women’s candidacies, their campaigns, and women’s voting behavior. In the final section of the course, we consider those general factors that might provide for increased gender equality and improved life status for women, in global, comparative perspective. Offered as POSC 346 and POSC 446 and WGST 346. Counts as SAGES Departmental Seminar.

POSC 348. History of Modern Political and Social Thought. 3 Units.
This course explores the responses of philosophers, economic theorists, culture critics, and public policy makers to changes in western society wrought by industrialization by focusing on their concerns with technological change. Offered as HSTY 348, HSTY 448 and POSC 348.

POSC 349. Political Science Research Methods. 3 Units.
This course examines approaches that political scientists use to understand events and processes. In doing so, the course provides students with skills helpful to completing senior projects, such as the ability to evaluate and conduct research. Through exercises and projects, students will take part in the research process from constructing a question to developing a research design to interpreting results. Students will learn and apply key techniques, including inductive and deductive reasoning, hypothesis construction, operationalization of concepts, measurements, sampling and probability, causal inference, and the logic of controls. They will produce materials common to the discipline, such as research designs. Offered as POSC 349 and POSC 449. Counts as SAGES Departmental Seminar.

POSC 351. Modern Political Thought. 3 Units.
Examination of a limited topic in the study of modern political thought. Topics vary. Offered as POSC 351 and POSC 451.

POSC 352. American Political Thought. 3 Units.
Examination of the unique contribution to the science of government made by American political thinkers. Offered as POSC 352 and POSC 452.

POSC 354. Political and Social Philosophy. 3 Units.
Justification of social institutions, primarily political ones. Such distinctions as that between de facto and legitimate authority; analysis of criteria for evaluation, such as social justice and equality; inquiry into theories of justification of the state; theory of democratic government and its alternatives. Readings from classical and contemporary sources. Recommended preparation: PHIL 101. Offered as PHIL 334, POSC 354, PHIL 434, and POSC 454.
POSC 355. Modern Political Ideologies. 3 Units.
Substance and nature of ideological thinking in the contemporary world via a survey of political "isms"--for example, liberalism, libertarianism, conservatism, fascism, socialism, and even more recent trends such as feminism, environmentalism, etc. Offered as POSC 355 and POSC 455.

POSC 356. Transitions to Democracy and Dictatorship. 3 Units.
Everyday life is dramatically different depending on whether one resides in a democracy or under a dictatorship. This course examines why some countries have democracies and others dictatorships. It explores successful, incomplete, and failed transitions to democracy. The incomplete transitions result in hybrid regimes, stuck between democracy and dictatorship, and the outright failures result in non-democracies, such as dictatorships. The course examines examples from most regions of the world, including Africa, Asia, Europe, the Middle East, the former Soviet Union, North America, and South America. Offered as POSC 356 and POSC 456.

POSC 357. Democratic Politics: Theory and Practice. 3 Units.
Study of the theory and application of democracy. The concept of democracy will be examined from the Athenian model to contemporary debates over participatory and deliberative models. Then the concept will be applied to understanding issues of democratic practice and the study of politics in American, comparative, and international arenas. Finally, the course will address the potential effects, both good and ill, of technological innovation on democratic practices, such as "distance" participation, the Internet, and other communication technology. Offered as POSC 357 and POSC 457.

POSC 358. Political Strategy. 3 Units.
This course examines practical applications of prominent political science theories. It is partly a how-to course covering a broad range of political activities, but the primary objective is to link practical issues with theories to help you understand why events happen the way they do. The course focuses on American politics, but the materials will be applicable to a wide range of situations. The course is a seminar requiring regular student presentations that will generate discussion about the readings and current events. Papers consist of analysis of current events, and require students to analyze the strategies used by prominent figures in the context of the theories we discuss in class. Offered as POSC 358 and POSC 458. Counts as SAGES Departmental Seminar.

POSC 360. Revolts and Revolutions in Global Perspective. 3 Units.
The Arab protests of 2011 gripped the attention of the world. Young protestors succeeded in unseating some long time rulers but in other cases tense standoffs have evolved. This course takes those events as a starting point to examine the broader political history of revolts and revolutions in the global south. The first part of the course examines some of the classic social science debates about what constitutes revolution, what leads to revolution, and what the effects can be. The second part of the course analyzes specific cases in Europe, Latin America, Africa, and Asia to understand the causes and consequences of revolt and revolution. What drives everyday persons to brave the dangers of protest? Why and why do political leaders decide to resist or reform? What happens when revolts fail? What happens when they succeed? Material for the course will include classic social science narratives, revolutionary polemics, popular analyses of events since 2011, examples of social media as political action, and first person narratives. Offered as POSC 360 and POSC 460.

POSC 361. State-Building and State Collapse. 3 Units.
Are nation-states the most effective means of organizing society? This course explores this question by examining the historical rationales behind the development of the nation-state, contemporary challenges to the nation-state, and potential alternatives to the nation-state. Possible challenges to the nation-state include multinational corporations, international humanitarian intervention, and regional integration. Alternative providers of state services include charities, companies, and mercenaries. Offered as POSC 361 and POSC 461.

POSC 362. Politics of Central Asia. 3 Units.
Once an unfamiliar region to many people of the world, Central Asia took center stage in the fall of 2001 as a result of the U.S. campaign against terrorism. This course will introduce students to the politics of Central Asia, focusing on the region today composed of Uzbekistan, Turkmenistan, Tajikistan, Kyrgyzstan, and Kazakhstan. We will review the nationalism, foreign relations, religion, ethnicity, and economics of the region. Offered as ETHS 362, POSC 362, and POSC 462.

POSC 363. Comparative Analysis of Elections and Electoral Systems. 3 Units.
Elections involve more than a simple act of voting to express individual preferences. The rules under which worldwide elections are held determine who controls the executive and how votes are converted into legislative seats. The mechanics of various electoral arrangements will be examined in detail and the consequences for the political system discussed in terms of strategies and desired outcomes on the part of contestants. Students will research individual countries and analyze recent elections from both qualitative and quantitative perspectives, including introduction to geospatial data for mapping variations in electoral behavior. Offered as POSC 363 and POSC 463. Counts as SAGES Departmental Seminar.

POSC 364. Dictatorship and Democracy in Modern Latin America. 3 Units.
Examination of political leadership in 20th-century Latin America, exploring the nature, causes, and consequences of dictatorship and democracy in the region, moving from the collapse of oligarchic rule and the emergence of populism in the 1930s and 1940s, to the end of democracy and establishment of military regimes in the 1960s and 1970s, and ultimately to the contemporary processes of democratization and economic liberalization. Offered as ETHS 364, POSC 364, and POSC 464.

POSC 365. Science, Technology, and Government. 3 Units.
Traces the development and influence of federal technology and science policies from colonial times to the present, with emphasis on the 20th century. Offered as HSTY 366 and POSC 365.

POSC 366. Government and Politics of Africa. 3 Units.
Comparative analysis of the political forces and organizations currently functioning in Africa, as well as a survey of the formal government institutions. Special emphasis on single-party rule, military rule, and the political ramifications of African socialism, tribalism and the problems of national integration. Offered as ETHS 366, POSC 366, and POSC 466.

POSC 367. Western European Political Systems. 3 Units.
Comparative analysis of sociopolitical systems of selected Western European industrial democracies, using North American systems as a point of comparison. Offered as POSC 367 and POSC 467.
POSC 369. Ethnicity, Gender, and Religion in Latin American Politics and Society. 3 Units.
This course focuses on aspects of Latin America's social and political realities and dilemmas. It will first explore race, gender, and religion, and then tackle revolution, democracy and populism. Throughout, the entire region's history, geography, and culture(s) will be considered; for example, the European and indigenous legacies in Mexico and Peru, Bolivia, Chile, and Ecuador; the Asian presence in Peru and Brazil; the African contributions to Cuba and Brazil, female heads of state, such as Nicaragua's Violeta Chamorro, Chile's Michelle Bachelet, Argentina's Cristina Fernandez de Kirchner, Costa Rica's Laura Chinchilla, and Brazil's Dilma Rousseff. The class will explore Liberation Theology and the new Pope's worries about the declining number of Catholics in the region. Today's multiparty democracy in Mexico, Hugo Chavez's 14-year rule in Venezuela, and Cuba's international humanitarian aid would not be possible without revolution(s) and populism. They are intertwined with ethnicity, gender, and religion. Offered as ETHS 369, POSC 369 and POSC 469.

POSC 370A. Political Economy. 3 Units.
Focus on debates concerning the proper relationship between political and economic systems, including conservative, liberal, and radical perspectives. The politics of international economics and the economics of international politics receive separate attention. The course concludes with study of "modern" political economy and the application of economic theory to the study of political systems. Offered as POSC 370A and POSC 470A.

POSC 370C. The United States and Asia. 3 Units.
Survey and analysis of U.S.-Asia relations in the post-World War II period. Focus specifically on the interaction of politics and economics in the United States' relations with Japan, China, and Southeast Asian countries. Topics will include the role of Asia in U.S. Cold War policies, the dynamics of U.S.-Japan alliance politics, post-Cold War issues involving U.S. foreign policy toward Asia, a history and analysis of economic conflict cooperation, and an examination of the move toward Asia-Pacific "regionalism." Offered as POSC 370C and POSC 470C.

POSC 370D. The Politics of China. 3 Units.
Now more than ever, the Chinese state and society are facing tremendous economic, social, and political challenges. This course presents an overview of current issues facing the People's Republic, including a changing (or not) political culture, policy processes and outcomes at the national and local levels, reform and economic growth, the resultant societal changes and pressures, and the consequent challenges the Communist Party faces as demand for political reform grows. The class involves a mixture of lectures and discussion and draws on a combination of primary and secondary sources, including current news reports and films. Offered as POSC 370D and POSC 470D.

POSC 370F. Financial Politics in the United States and the World. 3 Units.
This course explores how political institutions make policy in the financial area with particular emphasis on the United States. Using a bureaucratic politics framework, it examines money, banks and the securities industry by integrating a wide range of literature in economics and political science. Specific objectives include familiarizing students with different approaches to the political economy of finance from different disciplines, exploring the historical evolution of finance, examining the changing relationship between public and private authority within the financial system, considering how politics operates in a crisis, and evaluating the role of international financial institutions in the global economy. By taking this course, students will equip themselves for further research into politics and economics, as well as offer them tools to analyze future policy developments as they unfold. Offered as POSC 370F and POSC 470F.

POSC 370G. U.S. Intelligence and National Security. 3 Units.
Examination of the impact of the intelligence process on foreign policy making and superpower relations. Covers the life cycle of United States strategic intelligence from the collection of data to formulation of analytic judgments and the policy-level uses of intelligence. Emphasis on contemporary intelligence issues and processes, but includes the formative period of modern American intelligence in the World War II era. Offered as POSC 370G and POSC 470G.

POSC 370H. China's Foreign Policy. 3 Units.
The rise of China is evident in the country's more forward and robust foreign policy that began in 1979. At every turn, nations throughout the world must now consider China wherever their interests are at stake, be it Korea and Northeast Asia, Indochina and Southeast Asia, India/ Pakistan and South Asia, or Afghanistan and Iran in the Middle East, not to mention the many African states that welcome Chinese investment but chafe at China's presence. Further, China is increasingly aggressive in international trade, a major determinant of its foreign policy. This course describes the key factors that make up Chinese foreign policy, including its cultural tradition, policy-making institutions, the role of the military, and domestic determinants of foreign policy. The course also examines China's ever-changing foreign policy strategies, from an aggressive posture to charming its neighbors only to become more strident once again. The course will also examine China's role involving possible mercantilism, currency manipulation, and the hunt for traditional and alternative energy sources. Throughout the course, we will pay attention to how China's foreign policy relates to international relations theories and what strategies might be used to manage China's growing role in international affairs. Offered as POSC 370H and POSC 470H.

POSC 370J. International Law and Organizations. 3 Units.
Study of international organizations and international law as two means for regulating and coordinating nation-state behavior. History of the two techniques will be traced, covering 19th century efforts at cooperation, the League of Nations and the United Nations, regional and specialized global organization. The functions of international law in global politics will be stressed, with primary focus on the evolving role of law in dealing with global problems, e.g., war, the environment, economic cooperation, and human rights. Offered as POSC 370J and POSC 470J.

POSC 370K. Nationalism, Ethnicity, and Religion in World Politics. 3 Units.
Examination of the post-Cold War surge in conflicts among nationalisms, ethnic groups, and religions with particular attention to the former Yugoslavia, Ireland, India, Africa, and the Middle East. Offered as ETHS 370K, POSC 370K, and POSC 470K.
POSC 370M. Theories of Political Economy. 3 Units.
This course is a SAGES departmental seminar in political economy that brings a wide range of theoretical perspectives to bear on the relations between market and state in the contemporary world. It focuses on three questions: What have been the major debates concerning the role of the government in the economy? How were these debates resolved in the compromise of embedded liberalism, and What experiences have individual states had with these questions of political economy? To answer these questions, we will read original literature to uncover the connections among politics, economics, and the world of ideas that has resulted in the political debates we confront today. Offered as POSC 370M and POSC 470M. Counts as SAGES Departmental Seminar.

POSC 371. Natural Resources and World Politics. 3 Units.
Examination of the political causes and ramifications of the uneven distribution of the valuable natural resources for modern industrial societies. Strategic and military issues and the exploitation of the seabed. Examination in some detail of selected commodity issues, including petroleum, copper and uranium. Offered as POSC 371 and POSC 471.

POSC 372. Activism Beyond Borders: NGOs and International Advocacy. 3 Units.
This course examines the role of non-state actors, and particularly non-governmental organizations (NGOs) in world politics. We will begin with a survey of traditional theoretical approaches to international relations, so that students can be conversant in the basic theory and vocabulary of the discipline. We then examine the growing role of NGOs in world politics amidst the broader trend of globalization, and the academic and policy debates surrounding each. After this primer, the course will examine four "big questions" with respect to international activism: 1) When do NGOs mobilize? 2) What tactics do they use? 3) What explains success and failure in advocacy? 4) What are the broader political implications of a global class of elite advocates? Offered as POSC 372 and POSC 472.

POSC 373. Politics of the European Union. 3 Units.
Study of the origins, operations, and prospects for the European Union. This can include the historical context for the effort to restrict national rivalries (which fueled two world wars) and create common interests; the diplomatic challenges in finding common ground; the tasks and processes of governance within the EU, including its governing institutions, enforcement of terms for European Monetary Union and the operations of its bureaucracies; the social pressures that create policy challenges (such as agriculture policy and immigration); broad tensions within the enterprise (e.g., "broadening" vs. "deepening"), and the EU's potential place in international politics, especially the efforts to create a common foreign and security policy and the possible implications of the Euro for international political economy. Offered as POSC 373 and POSC 473.

POSC 374. Politics of Development in the Global South. 3 Units.
Exploration of the post-World War II emergence of the Global South nations of Africa, Asia, the Middle East, Latin America, and the Eastern Europe arena. Offered as ETHS 374, POSC 374, and POSC 474.

POSC 375. The International Politics of Technology. 3 Units.
Technology is deeply political. Nowhere is this statement more evident than in the realm of international relations, where governments perceive technology as a source of power and wealth and a symbol of relative position and modernity. Yet for centuries skeptics have questioned the economic rationale of government technology policies. Still, to this day, countries support emulation, innovation and a host of other strategies as means for catching up with leading nations or locking in current advantages. What lies behind such policies? What do they accomplish? And what are the domestic and international politics surrounding them? After reading classic arguments, including texts by Adam Smith, Alexander Hamilton and Friedrich List, students will consider 20th and 21st century debates and an array of experiments tried by poor, middle-income and rich countries. Cases include the development of new industries; the imposition of sanctions; the dilemma of dual technologies and military spillovers; the forging of national champions; the reorganization of banks and the creation of international financial centers; the copying of regional clusters (e.g. Silicon Valley) and stock markets (e.g. the Nasdaq); and the extraterritorial extension of domestic regulation and governance techniques. There are no prerequisites and first year students are welcome. Offered as POSC 375 and POSC 475.

POSC 376. United States Foreign Policy. 3 Units.
Focus on U.S. foreign policy making with a dynamic network of executive and congressional actors and organizations; analysis of traditional and contemporary U.S. foreign policies from nuclear defense to current economic resource issues; future role of the United States in world affairs. Offered as POSC 376 and POSC 476.

POSC 377. Politics of Russia. 3 Units.
Russia faces three problems: the creation of a sovereign state, the development of a new political system, and the restructuring of its economy. In this course we will challenge the assumption that the outcome of these three transitions will be a strong, democratic, capitalist country. We will ask whether civil war, organized crime, an immature party system, poor social services, and nomenklatura privatization bode poorly for these three transformations. Offered as POSC 377 and POSC 477.

POSC 378. International Relations Theory. 3 Units.
This course is a seminar in international relations theory. As such, we will bring a wide range of theoretical perspectives to bear on issues and debates in the area of international relations by systematically studying the evolution of the world system. The seminar is roughly divided into a first half focusing on war and the political system, and a second half focusing on trade, finance and the economic system. Each section devotes particular attention to ethical problems associated with political and economic issues. This course should develop students' ability to read and critically evaluate academic literature in the field of international relations, and enable students to produce a scholarly paper on one substantive area of the field. Offered as POSC 378 and POSC 478. Counts as SAGES Departmental Seminar.
POSC 379. Introduction to Middle East Politics. 3 Units.
This is an introductory course about Middle East Politics, in regional as well as international aspects. In this course we will explore broad social, economic, and political themes that have defined the region since the end of World War Two. Since this is an introductory course, a major goal will be to gain comparative knowledge about the region's states and peoples. The countries that comprise the modern Middle East are quite diverse; therefore, we will only be able to focus on a few cases in depth. A second goal is to use the tools and theories social scientists employ to answer broad questions related to the region, such as: How have colonial legacies shaped political and economic development in the Middle East? How do oil, religion, and identity interact with politics? How have external powers affected the region’s political development? What do the uprisings of 2011 hold for the region's future? Offered as POSC 379 and POSC 479.

POSC 380A. State and War in Africa and the Middle East. 3 Units.
The Middle East, North Africa, and Sub-Saharan Africa remain the most volatile and conflict prone regions of the world. Traditional approaches to war and state conflict have emphasized systemic variables, such as balance of power, military capabilities, perceptions, the security dilemma, and of course anarchy. While these concepts have generated much academic interest, their ability to explain and understand conflict in the developing world is severely limited. This is due to the basic fact that nearly all conflict in the world today is not between states but is taking place within state boundaries. What drives these conflicts? Are there common factors and patterns within the Middle East and Africa? How does sub-state conflict affect political and economic development? What are the most likely resolution strategies? Recommended preparation: POSC 379. Counts as SAGES Departmental Seminar.

POSC 380B. Uprising and Political Change in the Arab World. 3 Units.
This course explores political and social change in the Arab World with an emphasis on the 2011 uprisings. It is designed into a three week format taking place in the Arab World. Since the early 20th century, the 22 countries that comprise the Arab World have experienced multifaceted and rapid change. Coups, revolts, and revolution defined much of the 1950s and 1960s. In the ensuing decades however, Arab politics settled into seemingly stable political authoritarianism. Thus, it was a surprise when mobilized protesters unsealed some leaders in 2011. The primary questions for scholars and students is, what explains these momentous events? And what happens after? This course will take up these questions by carefully examining political and social change in the decades before 2011. By holding the course in an Arab country, students will be able to place the broad themes within a local context. Investigation and lectures will explore not just the history of change and protest but why protest succeeded in removing leaders in some countries yet was defeated in others. The ultimate goal is for students to gain the skills to pursue these questions at a macro-scholarly level as well as unpack those same questions at a local and regional level. Guest lectures and field trips are designed as far more than just visits. Each event will require students to inquire, converse, and research local conditions to address the larger questions. Primary course requirements include a daily journal, a short exam, and a final paper.

POSC 381. City as Classroom. 3 Units.
In this course, the city is the classroom. We will engage with the urban terrain. We will meet weekly off-campus, interact with community members, and interface--both literally and figuratively--with the city as a way to examine the linkages between historical, conceptual, and contemporary issues, with particular attention paid to race and class dynamics, inequality, and social justice. This course will have four intersecting components, primarily focusing on American cities since the 1930s: the social and physical construction of urban space, the built environment, life and culture in the city, and social movements and grassroots struggles. Offered as POSC 381, SOCI 481, POSC 481, and SOCI 481.

POSC 382A. Child Policy. 3 Units.
This course introduces students to issues in public policy that impact children and families. Local, state, and federal child policy will be considered, and topics will include, for example, policies related to child poverty, education, child welfare, juvenile justice, and children's physical and mental health. Students will learn how policy is developed, how research informs policy and vice versa, and a framework for analyzing social policy. Recommended preparation: One social sciences course or consent. Offered as ANTH 305, CHST 301, and POSC 382A.

POSC 383. Health Policy and Politics in the United States. 3 Units.
Overview of the principal institutions, processes, social forces, and ideas shaping the U.S. health system. Historical, political, economic, and sociological perspectives on the health system are explored as well as the intellectual context of recent policy changes, challenges, and developments. Students will acquire a sense of how health services are financed and delivered in the U.S. They will also learn how to assess its performance compared to that of other similar countries. Offered as POSC 383 and POSC 483.

POSC 384. Ethics and Public Policy. 3 Units.
Evaluation of ethical arguments in contemporary public policymaking discourse. That is, approaches to evaluating not only the efficiency of policy (Will this policy achieve its end for the least cost?) but also the ethics of policy (Are a policy’s intended ends ethically justified or “good,” and are our means to achieve those ends moral or “just”?). Overview of political ideologies that supply U.S. political actors with their ethical or moral arguments when proposing and implementing public policy, followed by an application of these differing perspectives to selected policy areas such as welfare, euthanasia, school choice, drug laws, censorship, or others. Offered as PHIL 384, PHIL 484, POSC 384 and POSC 484.

POSC 385. U.S. Bureaucratic Politics. 3 Units.
Bureaucracy is one of civilization's most important inventions. It is a way of coordinating very large numbers of people so as to do work, make decisions, and exercise power. Without it, much of modern life would be impossible. Yet “bureaucracy” is normally seen, in public discussion, as a problem, instead of as a solution. This course will consider both the reasons for and pathologies of bureaucratic organization. Its special focus is bureaucracy in American government. The course therefore will provide some introduction to the study of American public administration, but with special emphasis on how the work and performance of public bureaucracies in the United States is shaped by the specific tasks they are given and the distribution of power in the American political arena. Offered as POSC 385 and POSC 485. Counts as SAGES Departmental Seminar.
POSC 386. Making Public Policy. 3 Units.
Politics is about who wins, who loses, and why. Policy, by contrast, is often depicted as more “neutral”; policies are the means through which political decisions are carried out. In this class, we examine the notion that policy is the rational, impartial counterpart to the political arena. We will ask: How are public policies made? Why do some issues make it on to the agenda, while others do not? Can we separate facts from values, or are both always contested? We will examine how decision-making in a group introduces distinct challenges for policymaking. The course focuses on widely applicable themes of policymaking, drawing on both domestic and international examples. Offered as POSC 386 and POSC 486.

POSC 388. Politics, Policy, and the Global Environment. 3 Units.
This course examines the law, politics and policy surrounding global environmental challenges such as climate change. The course aims to provide a broad overview of the key concepts, actors, debates, and issues in global environmental politics. It aims to illustrate the complexities of addressing environmental problems—from the proliferation of global institutions and international actors, to the absence of central enforcement mechanisms. We examine the causes of environmental degradation and competing views on the gravity of the problem. Using concepts from political science and economics, we investigate the challenges in getting states to act jointly to address environmental problems. We examine the actors and institutions of global environmental politics, to understand how conditions are defined as problems and responses are chosen and implemented. The course concludes by applying the tools and concepts to the case of climate change. Offered as POSC 388, ESTD 388, POSC 488.

POSC 389. Special Topics in American Politics and Policy. 3 Units.
Specific topic will vary but will consist of an in-depth investigation of a particular policy area or political phenomenon. Topics will involve policy controversies of some current interest. Offered as POSC 389 and POSC 489.

POSC 390. Special Topics in International Relations. 3 Units.
This course will vary semester to semester and will focus on International Relations topics such as statecraft and diplomacy in contemporary world affairs; weak states and international sovereignty; and transnational soft law. A description of the topic(s) being covered will be available on the political science website each semester that the course is offered. Students may take this course more than once for up to 9 credits, when different topics are covered. Offered as POSC 390 and POSC 490.

POSC 391. Special Topics in Comparative Politics. 3 Units.
This course will vary semester to semester and will focus on comparative politics topics involving political issues and/or controversies of some current interest. These may include some of the following: federal vs unitary political systems, nationalism and national identity, independence movements in developed countries, comparative political behavior, national and supranational political organization, comparative public policy, political violence and violent conflict, comparative political economy, varieties of democracy, the comparative politics of gender, comparative race and ethnicity, among others. A description of the specific course topic focus will be available on the political science website each semester that the course is offered. Students may take this course more than once (up to 9 credits) so long as the topics are different. Offered as POSC 391 and POSC 491.

POSC 395. Special Projects. 1 - 6 Unit.
Study of a topic of particular interest, or an approved internship. The student must submit to the departmental office a project prospectus form, approved and signed by the faculty supervisor, no later than the end of the second week of classes. The prospectus must outline the goals of the project and the research methodology to be used and is part of the basis for grading. The prospectus form is available from the departmental office of from the department's Web page.

POSC 396. Senior Project SAGES Capstone. 3 Units.
Capstone experience for political science majors or senior POSC minors as part of the SAGES program, providing opportunity to do an in-depth paper on a topic of particular interest to them. Students must obtain approval from a faculty project advisor and list that advisor on the registration form. The advisor must sign and student submit to department a prospectus including goals, schedule, and research methodology. This paper should demonstrate, and ideally even extend, the skills and expertise developed over the course of study in the department. Upon completion of the capstone, students will be expected to present their work in a public forum. Recommended preparation: Junior or Senior political science major or senior political science minor and departmental prospectus form. Counts as SAGES Senior Capstone.

POSC 401. Decision-Making in American Cities. 3 Units.
Localities are the primary interface with government and provide the basic psychological place identification for most Americans. The course will explore this assertion in the context of urban America today. How are decisions made in cities? Who shapes these decisions and why? What role is played by shifting demographics, race, and poverty? What can the individual do to influence local decision-making? Offered as POSC 301 and POSC 401.

POSC 402. State Politics and Policy. 3 Units.
State governments may make more decisions that affect the life of an average citizen than does the federal government. The study of state politics and policy includes the different ways states organize the basic parts of American political systems (such as legislatures, executives, courts and parties); how state cultures, economies, and other factors shape how political institutions work; institutions of state governance that do not exist at the national level (such as the initiative and referendum); and the continual contest between state and federal governments to control policy, shift costs, and avoid blame. Offered as POSC 302 and POSC 402.

POSC 406. Interest Groups in the Policy Process. 3 Units.
Introduction to the institutions and processes that make up the political environment of nonprofit and other organizations in the United States, beginning with an examination of the role of civil society in a democracy and continuing with the framing of issues, role of political entrepreneurs and organized interests, elections, the legislative process and strategies for influencing it and the roles of executive institutions and the courts. Offered as POSC 306 and POSC 406.

POSC 408. The American Presidency. 3 Units.
The sources of, strategies of, and restraints on presidential leadership in the United States. Emphasis on problems of policy formation, presidential relations with Congress and executive agencies, and the electoral process. Offered as POSC 308 and POSC 408.

POSC 410. The Legislative Process. 3 Units.
Legislative, representative, and other functions of Congress and state legislatures; legislative relations with the executive and with private interests; powers and limitations of the legislature as a policy-making institution. Offered as POSC 310 and POSC 410.
POS 419. Politics and Money. 3 Units.
One of the most famous definitions of politics comes from Harold Laswell, who described it as the struggle over "who gets what, when, how." Money is at the center of most political conflict. It is a resource, a motivation, and an end unto itself. This course will examine the role of money in politics, with particular emphasis on American politics. We will discuss the role of money in elections, in the policy-making process, and what it means for representation. The course will begin with the question of the role that financial consideration play in public opinion and voting behavior. We will then address the role that money plays in election results, both in terms of its role in financing campaigns, and the relationship between the state of the economy and election results. Finally, we will discuss the policy-making process. In that context, we will address the role that interest groups play in the process, and how the quest for economic benefits for one's constituency motivates the behavior of elected officials. We will conclude by discussing how policy changes at the systematic level occur and the influence that various groups have on policy outcomes. Offered as POSC 319 and POSC 419.

POS 420B. The U.S. Midterm Elections. 3 Units.
Analysis of the midterm elections in the United States. Covers congressional and state elections in all regions, focusing on the issues, personalities, campaign strategies, and voter trends in this key electoral battle held between presidential elections. Offered every four years in conjunction with the election cycle. Offered as POSC 320B and POSC 420B.

POS 421. News Media and Politics. 3 Units.
Analysis of the political role of the news media in American government and politics. Examines the fascinating relationship between reporters and politicians. Covers the overall structure and legal position of the media as well as the media's impact on the American political system. Offered as POSC 321 and POSC 421.

POS 422. Political Movements and Political Participation. 3 Units.
Political Movements and Political Participation is concerned with the variety of ways citizens engage in collective activism in the United States and across national boundaries, and with the conditions under which citizens identify common concerns and join together in political movements to bring about change. The course begins with an examination of three general bodies of theory and research on political movements: resource mobilization, political opportunity structures, and cultural framing. We will also investigate frameworks of political participation for understanding the relationships among different expressions of collective activism and representation. In the context of these sometimes competing theories, we will consider 1) the conditions under which political movements are likely to emerge, as well as the circumstances in which collective political action is precluded; 2) how citizens come to recognize collective grievances and shared political identities; 3) the strategies and tactics of organized movements, and their likelihood of political success; and 4) the relationship between political movements, political parties, and the state. Offered as POSC 322 and POSC 422.

POS 423. Judicial Politics. 3 Units.
Rejecting the view that judges mechanically apply the law, the study of judicial politics seeks to understand the behavior of judges as political actors with policy goals. Topics include judicial selection and socialization, judicial policy change, judicial strategy (especially the strategic interaction of judges on multi-judge panels), the interaction of courts in hierarchical judicial systems, the policy impact of judicial decisions, and the courts' interactions with coordinate branches of government (the executive, Congress, state governments, state courts). Primary focus will be on the federal judiciary, with some discussion of state judicial systems. Offered as POSC 323 and POSC 423.

POS 425. American Constitutional Law. 3 Units.
An introductory survey of U.S. constitutional law. Special attention given to the historical, philosophical, and political dimensions of landmark Supreme Court cases. Judicial review, federalism, separation of powers, due process, and equal protection. Supreme Court's involvement in major political controversies: the New Deal, abortion, physician-assisted suicide, school desegregation, and affirmative action. Offered as POSC 325 and POSC 425.

POS 426. Constitutions in Practical Politics. 3 Units.
Overview of ancient Greek and Roman constitution-making, medieval principles, emergence of modern constitutionalism, and the constitutionalist vision of the American and French Revolutions. Examination of contemporary constitutional issues and developments in countries such as Canada, France, Germany, Great Britain, Ethiopia, India, and the United States. Offered as POSC 326 and POSC 426.

POS 427. Civil Liberties in America. 3 Units.
Supreme Court's interpretation of the First Amendment: liberty of religion through the establishment and free exercise clauses, freedoms of speech and the press, of assembly and association. The "pure tolerance" view examined against subversive speech, "fighting words," libel, and obscenity. Survey of content-neutral regulation, symbolic expression, and current efforts to limit expression (campus speech codes and the feminist anti-pornography movement). Offered as POSC 327 and POSC 427.

POS 428. Topics in Civil Liberties. 3 Units.
Rights of the accused as outlined in the Fourth, Fifth, Sixth, and Eighth Amendments. Topics covered are (1) arrests, searches, and seizures, (2) the privilege against compelled self-incrimination, (3) the rights to counsel, confrontation, and jury trial, and (4) the prohibition against cruel and unusual punishments. Case-specific approach but presents interplay of history, philosophy, and politics as background of each topic. Offered as POSC 328 and POSC 428.

POS 434. Violence and the Political System. 3 Units.
Empirical analysis of various theories advanced in the cross-cultural explanation of factors which cause and mediate the occurrence of violence--revolutions, terrorism, and civil disorder--within the political system. Offered as POSC 334 and POSC 434.

POS 441. Elections, Voters, and Political Parties. 3 Units.
Examination of American political parties, their activities, organization, characteristics, and functions. Candidate strategies and electoral history viewed within the context of voter orientations and predispositions, stressing linkages between citizen and party and between party and government. Offered as POSC 341 and POSC 441.
POSC 442. Water. 3 Units.
This seminar will explore the history of the meaning of water—that is, the social, cultural, and/or political significance placed on water by individuals and governments in different times and places. It will also examine how humans have acted upon water, and how it has acted upon humans, with great consequences for human life. This seminar will look at the history of water in the context of science, technology and society; public health; political science; and environmental history. Case studies will be drawn from a wide chronological and geographical range; from the ancient world to Renaissance Italy, nineteenth century India, modern Britain, Egypt, and the U.S. The course provides a wide perspective on the themes of the history of human-water interactions, but will also focus closely on some critical cases. Seminar participants will write a research paper on the topic of their choice in the environmental history of water. Offered as: HSTY 342, HSTY 442, POSC 342, POSC 442.

POSC 443. Public Opinion and American Democracy. 3 Units.
Examination of theories, concepts and empirical research related to attitudes and the political behavior of mass publics. Offered as POSC 343 and POSC 443.

POSC 446. Women and Politics. 3 Units.
Women and Politics involves a critical examination of the impact of gender on the forms and distributions of power and politics, with primary reference to the experience of women in the United States. Major concerns of the course include what we mean by "sex," "gender," and "politics"; the relationship between women and the state; how women organize collectively to influence state policies; and how the state facilitates and constrains women's access to and exercise of political power. The course is organized around four foci central to the study of women and politics. The first section of the course focuses on what we mean by "women," "gender," and "politics." In this section, we will consider how these concepts intersect and the ways in which each may be used to deepen our understanding of the workings of governments and political systems, and of women's relative political powerlessness. The second section of the course employs these concepts to understand the (re) emergence of the US feminist movement, its meanings, practices, and goals, and its transformation across US political history. In the third section, we turn to conventional electoral politics, focusing on women's candidacies, their campaigns, and women's voting behavior. In the final section of the course, we consider those general factors that might provide for increased gender equality and improved life status for women, in global, comparative perspective. Offered as POSC 346 and POSC 446 and WGST 346. Counts as SAGES Departmental Seminar.

POSC 449. Political Science Research Methods. 3 Units.
This course examines approaches that political scientists use to understand events and processes. In doing so, the course provides students with skills helpful to completing senior projects, such as the ability to evaluate and conduct research. Through exercises and projects, students will take part in the research process from constructing a question to developing a research design to interpreting results. Students will learn and apply key techniques, including inductive and deductive reasoning, hypothesis construction, operationalization of concepts, measurements, sampling and probability, causal inference, and the logic of controls. They will produce materials common to the discipline, such as research designs. Offered as POSC 349 and POSC 449. Counts as SAGES Departmental Seminar.

POSC 451. Modern Political Thought. 3 Units.
Examination of a limited topic in the study of modern political thought. Topics vary. Offered as POSC 351 and POSC 451.

POSC 452. American Political Thought. 3 Units.
Examination of the unique contribution to the science of government made by American political thinkers. Offered as POSC 352 and POSC 452.

POSC 454. Political and Social Philosophy. 3 Units.
Justification of social institutions, primarily political ones. Such distinctions as that between de facto and legitimate authority; analysis of criteria for evaluation, such as social justice and equality; inquiry into theories of justification of the state; theory of democratic government and its alternatives. Readings from classical and contemporary sources. Recommended preparation: PHIL 101. Offered as PHIL 334, POSC 354, PHIL 434, and POSC 454.

POSC 455. Modern Political Ideologies. 3 Units.
Substance and nature of ideological thinking in the contemporary world via a survey of political "isms"—for example, liberalism, libertarianism, conservatism, fascism, socialism, and even more recent trends such as feminism, environmentalism, etc. Offered as POSC 355 and POSC 455.

POSC 456. Transitions to Democracy and Dictatorship. 3 Units.
Everyday life is dramatically different depending on whether one resides in a democracy or under a dictatorship. This course examines why some countries have democracies and others dictatorships. It explores successful, incomplete, and failed transitions to democracy. The incomplete transitions result in hybrid regimes, stuck between democracy and dictatorship, and the outright failures result in non-democracies, such as dictatorships. The course examines examples from most regions of the world, including Africa, Asia, Europe, the Middle East, the former Soviet Union, North America, and South America. Offered as POSC 356 and POSC 456.

POSC 457. Democratic Politics: Theory and Practice. 3 Units.
Study of the theory and application of democracy. The concept of democracy will be examined from the Athenian model to contemporary debates over participatory and deliberative models. Then the concept will be applied to understanding issues of democratic practice and the study of politics in American, comparative, and international arenas. Finally, the course will address the potential effects, both good and ill, of technological innovation on democratic practices, such as “distance” participation, the Internet, and other communication technology. Offered as POSC 357 and POSC 457.

POSC 458. Political Strategy. 3 Units.
This course examines practical applications of prominent political science theories. It is partly a how-to course covering a broad range of political activities, but the primary objective is to link practical issues with theories to help you understand why events happen the way they do. The course focuses on American politics, but the materials will be applicable to a wide range of situations. The course is a seminar requiring regular student presentations that will generate discussion about the readings and current events. Papers consist of analysis of current events, and require students to analyze the strategies used by prominent figures in the context of the theories we discuss in class. Offered as POSC 358 and POSC 458. Counts as SAGES Departmental Seminar.
POSC 460. Revolts and Revolutions in Global Perspective. 3 Units.
The Arab protests of 2011 gripped the attention of the world. Young protesters succeeded in unseating some long time rulers but in other cases tense standoffs have evolved. This course takes those events as a starting point to examine the broader political history of revolts and revolutions in the global south. The first part of the course examines some of the classic social science debates about what constitutes revolution, what leads to revolution, and what the effects can be. The second part of the course analyzes specific cases in Europe, Latin America, Africa, and Asia to understand the causes and consequences of revolt and revolution. What drives everyday persons to brave the dangers of protest? When and why do political leaders decide to resist or reform? What happens when revolts fail? What happens when they succeed? Material for the course will include classic social science narratives, revolutionary polemics, popular analyses of events since 2011, examples of social media as political action, and first person narratives. Offered as POSC 360 and POSC 460.

POSC 461. State-Building and State Collapse. 3 Units.
Are nation-states the most effective means of organizing society? This course explores this question by examining the historical rationales behind the development of the nation-state, contemporary challenges to the nation-state, and potential alternatives to the nation-state. Possible challenges to the nation-state include multinational corporations, international humanitarian intervention, and regional integration. Alternative providers of state services include charities, companies, and mercenaries. Offered as POSC 361 and POSC 461.

POSC 462. Politics of Central Asia. 3 Units.
Once an unfamiliar region to many people of the world, Central Asia took center stage in the fall of 2001 as a result of the U.S. campaign against terrorism. This course will introduce students to the politics of Central Asia, focusing on the region today composed of Uzbekistan, Turkmenistan, Tajikistan, Kyrgyzstan, and Kazakhstan. We will review the nationalism, foreign relations, religion, ethnicity, and economics of the region. Offered as ETHS 362, POSC 362, and POSC 462.

POSC 463. Comparative Analysis of Elections and Electoral Systems. 3 Units.
Elections involve more than a simple act of voting to express individual preferences. The rules under which worldwide elections are held determine who controls the executive and how votes are converted into legislative seats. The mechanics of various electoral arrangements will be examined in detail and the consequences for the political system discussed in terms of strategies and desired outcomes on the part of contestants. Students will research individual countries and analyze recent elections from both qualitative and quantitative perspectives, including introduction to geospatial data for mapping variations in electoral behavior. Offered as POSC 363 and POSC 463. Counts as SAGES Departmental Seminar.

POSC 464. Dictatorship and Democracy in Modern Latin America. 3 Units.
Examination of political leadership in 20th-century Latin America, exploring the nature, causes, and consequences of dictatorship and democracy in the region, moving from the collapse of oligarchic rule and the emergence of populism in the 1930s and 1940s, to the end of democracy and establishment of military regimes in the 1960s and 1970s, and ultimately to the contemporary processes of democratization and economic liberalization. Offered as ETHS 364, POSC 364, and POSC 464.

POSC 466. Government and Politics of Africa. 3 Units.
Comparative analysis of the political forces and organizations currently functioning in Africa, as well as a survey of the formal government institutions. Special emphasis on single-party rule, military rule, and the political ramifications of African socialism, tribalism and the problems of national integration. Offered as ETHS 366, POSC 366, and POSC 466.

POSC 467. Western European Political Systems. 3 Units.
Comparative analysis of sociopolitical systems of selected Western European industrial democracies, using North American systems as a point of comparison. Offered as POSC 367 and POSC 467.

POSC 468. Ethnicity, Gender, and Religion in Latin American Politics and Society. 3 Units.
This course focuses on aspects of Latin America's social and political realities and dilemmas. It will first explore race, gender, and religion, and then tackle revolution, democracy and populism. Throughout, the entire region's history, geography, and culture(s) will be considered; for example, the European and indigenous legacies in Mexico and Peru, Bolivia, Chile, and Ecuador; the Asian presence in Peru and Brazil; the African contributions to Cuba and Brazil, female heads of state, such as Nicaragua's Violeta Chamorro, Chile's Michelle Bachelet, Argentina's Cristina Fernandez de Kirchner, Costa Rica's Laura Chinchilla, and Brazil's Dilma Rousseff. The class will explore Liberation Theology and the new Pope's worries about the declining number of Catholics in the region. Today's multiparty democracy in Mexico, Hugo Chavez's 14-year rule in Venezuela, and Cuba's international humanitarian aid would not be possible without revolution(s) and populism. They are intertwined with ethnicity, gender, and religion. Offered as ETHS 369, POSC 369 and POSC 469.

POSC 470A. Political Economy. 3 Units.
Focus on debates concerning the proper relationship between political and economic systems, including conservative, liberal, and radical perspectives. The politics of international economics and the economics of international politics receive separate attention. The course concludes with study of "modern" political economy and the application of economic theory to the study of political systems. Offered as POSC 370A and POSC 470A.

POSC 470C. The United States and Asia. 3 Units.
Survey and analysis of U.S.-Asia relations in the post-World War II period. Focus specifically is on the interaction of politics and economics in the United States’ relations with Japan, China, and Southeast Asian countries. Topics will include the role of Asia in U.S. Cold War policies, the dynamics of U.S.-Japan alliance politics, post-Cold War issues involving U.S. foreign policy toward Asia, a history and analysis of economic conflict cooperation, and an examination of the move toward Asia-Pacific “regionalism.” Offered as POSC 370C and POSC 470C.

POSC 470D. The Politics of China. 3 Units.
Now more than ever, the Chinese state and society are facing tremendous economic, social, and political challenges. This course presents an overview of current issues facing the People's Republic, including a changing (or not) political culture, policy processes and outcomes at the national and local levels, reform and economic growth, the resultant societal changes and pressures, and the consequent challenges the Communist Party faces as demand for political reform grows. The class involves a mixture of lectures and discussion and draws on a combination of primary and secondary sources, including current news reports and films. Offered as POSC 370D and POSC 470D.
POSC 470F. Financial Politics in the United States and the World. 3 Units.
This course explores how political institutions make policy in the financial area with particular emphasis on the United States. Using a bureaucratic politics framework, it examines money, banks and the securities industry by integrating a wide range of literature in economics and political science. Specific objectives include familiarizing students with different approaches to the political economy of finance from different disciplines, exploring the historical evolution of finance, examining the changing relationship between public and private authority within the financial system, considering how politics operates in a crisis, and evaluating the role of international financial institutions in the global economy. By taking this course, students will equip themselves for further research into politics and economics, as well as offer them tools to analyze future policy developments as they unfold. Offered as POSC 370F and POSC 470F.

POSC 470G. U.S. Intelligence and National Security. 3 Units.
Examination of the impact of the intelligence process on foreign policy making and superpower relations. Covers the life cycle of United States strategic intelligence from the collection of data to formulation of analytic judgments and the policy-level uses of intelligence. Emphasis on contemporary intelligence issues and processes, but includes the formative period of modern American intelligence in the World War II era. Offered as POSC 370G and POSC 470G.

POSC 470H. China’s Foreign Policy. 3 Units.
The rise of China is evident in the country’s more forward and robust foreign policy that began in 1979. At every turn, nations throughout the world must now consider China wherever their interests are at stake, be it Korea and Northeast Asia, Indochina and Southeast Asia, India/ Pakistan and South Asia, or Afghanistan and Iran in the Middle East, not to mention the many African states that welcome Chinese investment but chafe at China’s presence. Further, China is increasingly aggressive in international trade, a major determinant of its foreign policy. This course describes the key factors that make up Chinese foreign policy, including its cultural tradition, policy-making institutions, the role of the military, and domestic determinants of foreign policy. The course also examines China’s ever-changing foreign policy strategies, from an aggressive posture to charming its neighbors only to become more strident once again. The course will also examine China’s role involving possible mercantilism, currency manipulation, and the hunt for traditional and alternative energy sources. Throughout the course, we will pay attention to how China’s foreign policy relates to international relations theories and what strategies might be used to manage China’s growing role in international affairs. Offered as POSC 370H and POSC 470H.

POSC 470J. International Law and Organizations. 3 Units.
Study of international organizations and international law as two means for regulating and coordinating nation-state behavior. History of the two techniques will be traced, covering 19th century efforts at cooperation, the League of Nations and the United Nations, regional and specialized global organization. The functions of international law in global politics will be stressed, with primary focus on the evolving role of law in dealing with global problems, e.g., war, the environment, economic cooperation, and human rights. Offered as POSC 370J and POSC 470J.

POSC 470K. Nationalism, Ethnicity, and Religion in World Politics. 3 Units.
Examination of the post-Cold War surge in conflicts among nationalisms, ethnic groups, and religions with particular attention to the former Yugoslavia, Ireland, India, Africa, and the Middle East. Offered as ETHS 370K, POSC 370K, and POSC 470K.

POSC 470M. Theories of Political Economy. 3 Units.
This course is a SAGES departmental seminar in political economy that brings a wide range of theoretical perspectives to bear on the relations between market and state in the contemporary world. It focuses on three questions: What have been the major debates concerning the role of the government in the economy? How were these debates resolved in the compromise of embedded liberalism, and What experiences have individual states had with these questions of political economy? To answer these questions, we will read original literature to uncover the connections among politics, economics, and the world of ideas that has resulted in the political debates we confront today. Offered as POSC 370M and POSC 470M. Counts as SAGES Departmental Seminar.

POSC 471. Natural Resources and World Politics. 3 Units.
Examination of the political causes and ramifications of the uneven distribution of the valuable natural resources for modern industrial societies. Strategic and military issues and the exploitation of the sea bed. Examination in some detail of selected commodity issues, including petroleum, copper and uranium. Offered as POSC 371 and POSC 471.

POSC 472. Activism Beyond Borders: NGOs and International Advocacy. 3 Units.
This course examines the role of non-state actors, and particularly non-governmental organizations (NGOs) in world politics. We will begin with a survey of traditional theoretical approaches to international relations, so that students can be conversant in the basic theory and vocabulary of the discipline. We then examine the growing role of NGOs in world politics amidst the broader trend of globalization, and the academic and policy debates surrounding each. After this primer, the course will examine four "big questions" with respect to international activism: 1) When do NGOs mobilize? 2) What tactics do they use? 3) What explains success and failure in advocacy? 4) What are the broader political implications of a global class of elite advocates? Offered as POSC 372 and POSC 472.

POSC 473. Politics of the European Union. 3 Units.
Study of the origins, operations, and prospects for the European Union. This can include the historical context for the effort to restrict national rivalries (which fueled two world wars) and create common interests; the diplomatic challenges in finding common ground; the tasks and processes of governance within the EU, including its governing institutions, enforcement of terms for European Monetary Union and the operations of its bureaucracies; the social pressures that create policy challenges (such as agriculture policy and immigration); broad tensions within the enterprise (e.g., "broadening" vs. "deepening"), and the EU's potential place in international politics, especially the efforts to create a common foreign and security policy and the possible implications of the Euro for international political economy. Offered as POSC 373 and POSC 473.

POSC 474. Politics of Development in the Global South. 3 Units.
Exploration of the post-World War II emergence of the Global South nations of Africa, Asia, the Middle East, Latin America, and the Eastern Europe arena. Offered as ETHS 374, POSC 374, and POSC 474.
POSC 475. The International Politics of Technology. 3 Units.
Technology is deeply political. Nowhere is this statement more evident than in the realm of international relations, where governments perceive technology as a source of power and wealth and a symbol of relative position and modernity. Yet for centuries skeptics have questioned the economic rationale of government technology policies. Still, to this day, countries support emulation, innovation and a host of other strategies as means for catching up with leading nations or locking in current advantages. What lies behind such policies? What do they accomplish? And what are the domestic and international politics surrounding them? After reading classic arguments, including texts by Adam Smith, Alexander Hamilton and Friedrich List, students will consider 20th and 21st century debates and an array of experiments tried by poor, middle-income and rich countries. Cases include the development of new industries; the imposition of sanctions; the dilemma of dual technologies and military spillovers; the forging of national champions; the reorganization of banks and the creation of international financial centers; the copying of regional clusters (e.g. Silicon Valley) and stock markets (e.g. the Nasdaq); and the extraterritorial extension of domestic regulation and governance techniques. There are no prerequisites and first year students are welcome. Offered as POSC 375 and POSC 475.

POSC 476. United States Foreign Policy. 3 Units.
Focus on U.S. foreign policy making with a dynamic network of executive and congressional actors and organizations; analysis of traditional and contemporary U.S. foreign policies from nuclear defense to current economic resource issues; future role of the United States in world affairs. Offered as POSC 376 and POSC 476.

POSC 477. Politics of Russia. 3 Units.
Russia faces three problems: the creation of a sovereign state, the development of a new political system, and the restructuring of its economy. In this course we will challenge the assumption that the outcome of these three transitions will be a strong, democratic, capitalist country. We will ask whether civil war, organized crime, an immature party system, poor social services, and nomenklatura privatization bode poorly for these three transformations. Offered as POSC 377 and POSC 477.

POSC 478. International Relations Theory. 3 Units.
This course is a seminar in international relations theory. As such, we will bring a wide range of theoretical perspectives to bear on issues and debates in the area of international relations by systematically studying the evolution of the world system. The seminar is roughly divided into a first half focusing on war and the political system, and a second half focusing on trade, finance and the economic system. Each section devotes particular attention to ethical problems associated with political and economic issues. This course should develop students' ability to read and critically evaluate academic literature in the field of international relations, and enable students to produce a scholarly paper on one substantive area of the field. Offered as POSC 378 and POSC 478. Counts as SAGES Departmental Seminar.

POSC 479. Introduction to Middle East Politics. 3 Units.
This is an introductory course about Middle East Politics, in regional as well as international aspects. In this course we will explore broad social, economic, and political themes that have defined the region since the end of World War Two. Since this is an introductory course, a major goal will be to gain comparative knowledge about the region's states and peoples. The countries that comprise the modern Middle East are quite diverse; therefore, we will only be able to focus on a few cases in depth. A second goal is to use the tools and theories social scientists employ to answer broad questions related to the region, such as: How have colonial legacies shaped political and economic development in the Middle East? How do oil, religion, and identity interact with politics? How have external powers affected the region's political development? What do the uprisings of 2011 hold for the region's future? Offered as POSC 379 and POSC 479.

POSC 481. City as Classroom. 3 Units.
In this course, the city is the classroom. We will engage with the urban terrain. We will meet weekly off-campus, interact with community members, and interface–both literally and figuratively–with the city as a way to examine the linkages between historical, conceptual, and contemporary issues, with particular attention paid to race and class dynamics, inequality, and social justice. This course will have four intersecting components, primarily focusing on American cities since the 1930s: the social and physical construction of urban space, the built environment, life and culture in the city, and social movements and grassroots struggles. Offered as HSTY 381, POSC 381, SOCI 381, HSTY 481, POSC 481, and SOCI 481.

POSC 483. Health Policy and Politics in the United States. 3 Units.
Overview of the principal institutions, processes, social forces, and ideas shaping the U.S. health system. Historical, political, economic, and sociological perspectives on the health system are explored as well as the intellectual context of recent policy changes, challenges, and developments. Students will acquire a sense of how health services are financed and delivered in the U.S. They will also learn how to assess its performance compared to that of other similar countries. Offered as POSC 383 and POSC 483.

POSC 484. Ethics and Public Policy. 3 Units.
Evaluation of ethical arguments in contemporary public policymaking discourse. That is, approaches to evaluating not only the efficiency of policy (Will this policy achieve its end for the least cost?) but also the ethics of policy (Are a policy's intended ends ethically justified or "good," and are our means to achieve those ends moral or "just"?). Overview of political ideologies that supply U.S. political actors with their ethical or moral arguments when proposing and implementing public policy, followed by an application of these differing perspectives to selected policy areas such as welfare, euthanasia, school choice, drug laws, censorship, or others. Offered as PHIL 384, PHIL 484, POSC 384 and POSC 484.
POSC 485. U.S. Bureaucratic Politics. 3 Units.
Bureaucracy is one of civilization’s most important inventions. It is a way of coordinating very large numbers of people so as to do work, make decisions, and exercise power. Without it, much of modern life would be impossible. Yet “bureaucracy” is normally seen, in public discussion, as a problem, instead of as a solution. This course will consider both the reasons for and pathologies of bureaucratic organization. Its special focus is bureaucracy in American government. The course therefore will provide some introduction to the study of American public administration, but with special emphasis on how the work and performance of public bureaucracies in the United States is shaped by the specific tasks they are given and the distribution of power in the American political arena. Offered as POSC 385 and POSC 485. Counts as SAGES Departmental Seminar.

POSC 486. Making Public Policy. 3 Units.
Politics is about who wins, who loses, and why. Policy, by contrast, is often depicted as more “neutral”; policies are the means through which political decisions are carried out. In this class, we examine the notion that policy is the rational, impartial counterpart to the political arena. We will ask: How are public policies made? Why do some issues make it on to the agenda, while others do not? Can we separate facts from values, or are both always contested? We will examine how decision-making in a group introduces distinct challenges for policymaking. The course focuses on widely applicable themes of policymaking, drawing on both domestic and international examples. Offered as POSC 386 and POSC 486.

POSC 488. Politics, Policy, and the Global Environment. 3 Units.
This course examines the law, politics and policy surrounding global environmental challenges such as climate change. The course aims to provide a broad overview of the key concepts, actors, debates, and issues in global environmental politics. It aims to illustrate the complexities of addressing environmental problems—from the proliferation of global institutions and international actors, to the absence of central enforcement mechanisms. We examine the causes of environmental degradation and competing views on the gravity of the problem. Using concepts from political science and economics, we investigate the challenges in getting states to act jointly to address environmental problems. We examine the actors and institutions of global environmental politics, to understand how conditions are defined as problems and responses are chosen and implemented. The course concludes by applying the tools and concepts to the case of climate change. Offered as POSC 388, ESTD 388, POSC 488.

POSC 489. Special Topics in American Politics and Policy. 3 Units.
Specific topic will vary but will consist of an in-depth investigation of a particular policy area or political phenomenon. Topics will involve policy controversies of some current interest. Offered as POSC 389 and POSC 489.

POSC 490. Special Topics in International Relations. 3 Units.
This course will vary semester to semester and will focus on International Relations topics such as statecraft and diplomacy in contemporary world affairs; weak states and international sovereignty; and transnational soft law. A description of the topic(s) being covered will be available on the political science website each semester that the course is offered. Students may take this course more than once for up to 9 credits, when different topics are covered. Offered as POSC 390 and POSC 490.

POSC 491. Special Topics in Comparative Politics. 3 Units.
This course will vary semester to semester and will focus on comparative politics involving political issues and/or controversies of some current interest. These may include some of the following: federal vs. unitary political systems, nationalism and national identity, independence movements in developed countries, comparative political behavior, national and supranational political organization, comparative public policy, political violence and violent conflict, comparative political economy, varieties of democracy, the comparative politics of gender, comparative race and ethnicity, among others. A description of the specific course topic focus will be available on the political science website each semester that the course is offered. Students may take this course more than once (up to 9 credits) so long as the topics are different. Offered as POSC 391 and POSC 491.

POSC 495. Independent Study. 3 Units.
Graduate level independent study taken for a grade.

POSC 601. Individual Investigation. 1 - 6 Unit.
The student must submit to the departmental office a project prospectus form, approved and signed by the faculty project supervisor, no later than the end of the second week of classes. The prospectus must outline the goals of the project and the research methodology to be used and is part of the basis for grading. The prospectus form is available from the departmental office. Prereq: Departmental prospectus form, graduate standing, and consent of department.

POSC 651. Thesis M.A.. 3 - 6 Units.
Independent study of a research question and completion of a major research paper. An approved prospectus is required. Prereq: Graduate standing.

POSC 701. Dissertation Ph.D.. 1 - 9 Unit.
Prereq: Predoctoral research consent or advanced to Ph.D. candidacy milestone.

Public Policy Program

A minor in public policy is available to undergraduates in the College of Arts and Sciences and in the economics and management programs in the Weatherhead School of Management. The course requirements are in four categories: the public policy process; economic analysis; policy or political institutions or history; and a specific policy field. Courses are listed in the “Undergraduate” section (see link above). Substitutions can be made under exceptional circumstances, at the discretion of the program director.

Undergraduate or graduate courses with public policy content are offered through the Departments of Anthropology, Earth, Environmental and Planetary Sciences, History, Political Science, and Sociology in the College of Arts and Sciences; through the Department of Economics and other departments in the Weatherhead School of Management; through the School of Law, the School of Medicine, and the Frances Payne Bolton School of Nursing; and through the Jack, Joseph and Morton Mandel School of Applied Social Sciences. Students can engage with policy issues both through courses and through the extracurricular programming of the Center for Policy Studies and other university bodies.

Undergraduate Programs

Minor

One of the following:

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<th>Course Code</th>
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<td>POSC 386</td>
<td>Making Public Policy</td>
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<td>POSC 383</td>
<td>Health Policy and Politics in the United States</td>
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Department of Religious Studies

The academic study of religion at Case Western Reserve University is multicultural, non-sectarian, and both disciplinary and interdisciplinary. Students examine a range of past and present cultures and societies using methods and approaches drawn from the humanities, arts, social sciences, and sciences, all of which sharpen critical and evaluative skills. Religious beliefs, institutions, and practices are studied with emphasis placed on the critical problems and possibilities inherent in current theories, methods, and technologies.

The Department of Religious Studies offers both undergraduate (Bachelor of Arts) and graduate (Master of Arts) degrees. Undergraduates may pursue either a major or minor in the department; outstanding students may apply to the departmental honors program. Both the major and minor programs acquaint students with significant religious texts and traditions and with the cultures and societies in which these traditions are grounded. Majors are encouraged to participate in study abroad programs.

Where appropriate, courses are designed to utilize Internet and other technological resources, cultural institutions in University Circle, and the cultural diversity of Greater Cleveland. Several 300-level courses may be taken for graduate credit by fulfilling additional course requirements. The Department of Religious Studies also contributes courses to and supports a number of the college’s interdisciplinary programs and centers, such as Asian Studies, Environmental Studies, Ethnic Studies, Women’s and Gender Studies, International Studies, and Judaic Studies.

The academic study of religion, combined with appropriate courses in other fields, provides an excellent background for any professional career that involves interaction with diverse populations—including law, engineering, medicine and health care professions, journalism, and social work—and for graduate studies in a number of fields. A major in religious studies provides a well-rounded liberal arts education or can be combined conveniently with a second major. A minor in religious studies complements and broadens any field chosen as a major.

Undergraduate Programs

Major

Students majoring in religious studies must complete a minimum of 30 semester hours. Requirements for the major are as follows:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>RLGN 102</td>
<td>Introduction to the Study of Religion</td>
<td>3</td>
</tr>
<tr>
<td>RLGN 299</td>
<td>Method and Theory in the Study of Religion</td>
<td>6</td>
</tr>
<tr>
<td>&amp; RLGN 399</td>
<td>Major/Minor Seminar</td>
<td>6</td>
</tr>
<tr>
<td>POSC 306</td>
<td>Interest Groups in the Policy Process</td>
<td>3</td>
</tr>
<tr>
<td>ECON 102</td>
<td>Principles of Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>HSTY 256</td>
<td>American Political History</td>
<td>3</td>
</tr>
<tr>
<td>HSTY 400</td>
<td>Graduate Topical Seminar</td>
<td>3</td>
</tr>
<tr>
<td>POSC 308</td>
<td>The American Presidency</td>
<td>3</td>
</tr>
<tr>
<td>POSC 310</td>
<td>The Legislative Process</td>
<td>3</td>
</tr>
<tr>
<td>POSC 323</td>
<td>Judicial Politics</td>
<td>3</td>
</tr>
<tr>
<td>POSC 384</td>
<td>Ethics and Public Policy</td>
<td>3</td>
</tr>
<tr>
<td>POSC 385</td>
<td>U.S. Bureaucratic Politics</td>
<td>3</td>
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<tr>
<td>Two courses on a particular field of public policy</td>
<td>6</td>
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</table>

Total Units: 15

- Selected with the approval of the program director. A list of courses that have been approved in the past is available on the Public Policy Program’s Web site (http://www.case.edu/artsci/public_policy/specialization.html).

Program Advisory Committee

Joseph White, PhD  
Luxenberg Family Professor of Public Policy; Director, Center for Policy Studies; Director, Public Policy Program

Brian Gran, JD  
Associate Professor, Department of Sociology

David C. Hammack, PhD  
Hiram C. Haydn Professor of History

Susan Helper, PhD  
AT&T Professor of Regional Economic Development, Department of Economics, Weatherhead School of Management

Department of Religious Studies

The Integrated Graduate Studies (IGS) Program (http://bulletin.case.edu/undergraduatestudies/gradprofessional/#accelerationtowardgraduatedegreetext) in Religious Studies offers students the opportunity to earn credit toward the M.A. while also completing requirements for the B.A. Students must apply to the Graduate School for acceptance into this program. Upon admission to the program, IGS students register as students in the School of Graduate Studies and are subject to the policies, rules and regulations of the School of Graduate Studies.

For more information and eligibility requirements, see the IGS Program website.

Departmental Honors

Majors who have an overall grade point average of 3.5 and a grade point average of 3.5 in religious studies courses may apply to the honors program. Such students should take RLGN 299 Method and Theory in the Study of Religion in the fall semester and RLGN 395 Honors Research II (instead of RLGN 399) in the spring semester of the senior year. During the fall semester, the student will work with an honors advisor to prepare a proposal to be approved by the department no later
than the end of the first semester. Departmental honors are awarded upon completion and satisfactory defense of the senior project before a faculty committee, provided that the required grade point averages are maintained.

Minor
A minor in religious studies requires at least 18 credit hours, to include the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>RLGN 102</td>
<td>Introduction to the Study of Religion</td>
<td>3</td>
</tr>
<tr>
<td>RLGN 299</td>
<td>Method and Theory in the Study of Religion &amp; Major/Minor Seminar</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Nine hours of elective credit</td>
<td>9</td>
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</tbody>
</table>

* The nine hours of elective credit hours are chosen in consultation with a departmental advisor. The courses should demonstrate study of diverse religious traditions.

General Information
The department offers a graduate program leading to a Master of Arts degree in Religious Studies. This two-year program concentrates on method and theory in the study of religion. The MA is designed to give students from a variety of backgrounds a solid foundation in the methods used in the contemporary study of religion.

Program Curriculum

**First Year**

<table>
<thead>
<tr>
<th>Units</th>
<th>Fall</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foundational Readings in Religious Studies (RLGN 401) (A reading course based on the major formative works of the field. Bibliography to be worked out by graduate advisor in consultation with the student. Students will demonstrate familiarity with the literature through written examination.)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>One 400-level RLGN course</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>An elective dealing with the method and theory in the study of religion</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>An elective dealing with method and theory in the study of religion</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Independent Study with thesis advisor to prepare proposal. To be approved by the graduate faculty by the beginning of the third semester.</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>One 400-level RLGN course</td>
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<td>3</td>
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<tr>
<td>Year Total:</td>
<td>9</td>
<td>9</td>
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**Second Year**

<table>
<thead>
<tr>
<th>Units</th>
<th>Fall</th>
<th>Spring</th>
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<tbody>
<tr>
<td>One 400-level RLGN course</td>
<td>3</td>
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<tr>
<td>Thesis M.A. (RLGN 651) (or elective)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Thesis M.A. (RLGN 651)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Thesis M.A. (RLGN 651)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Year Total:</td>
<td>9</td>
<td>3</td>
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</tbody>
</table>

**Total Units in Sequence:** 30

Department Faculty
Timothy K. Beal, PhD  
(Emory University)  
Florence Harkness Professor of Religion and Chair  
Biblical studies; Near Eastern studies; environmental studies; religion and culture; gender studies

Peter J. Haas, PhD  
(Brown University)  
Abba Hillel Silver Professor of Jewish Studies  
Jewish literature and thought; Western religions; science and religion; religion and culture

Joy R. Bostic, PhD  
(Union Theological Seminary)  
Associate Professor  
African-American religion; women and religion; U.S. urban religion

William E. Deal, PhD  
(Harvard University)  
Severance Professor in the History of Religion  
Buddhism; East Asian religions; method and theory; religion and culture; cognitive science of religion and ethics

Justine Howe, PhD  
(Northwestern University)  
Assistant Professor  
Anthropology of religion; Islamic studies

Deepak Sarma, PhD  
(University of Chicago)  
Professor  
Hinduism; Indian philosophy; philosophy of religion; method and theory

Jonathan Tan, PhD  
(The Catholic University of America)  
The Archbishop Paul J. Hallinan Professor in Catholic Studies  
Catholic Studies

Lecturers
Ramez Islambouli, MA  
(Case Western Reserve University)  
Full-time Lecturer  
Islam; Islamic thought, Islamic law

Judith Neulander, PhD  
(Indiana University)  
Full-time Lecturer  
Folklore, mythology; Jewish popular culture

Secondary Faculty
Julie Exline, PhD  
(State University of New York at Stony Brook)  
Professor  
Psychology of religion and spirituality
Courses

RLGN 102. Introduction to the Study of Religion. 3 Units.
Introduction to the academic study of religion and of the religious dimensions of life. Open to all students but prerequisite for majors and minors in religious studies.

RLGN 108. The History of Yoga: The Yoga of Transformation and the Transformation of Yoga. 3 Units.
In this class we will investigate the history and context of yoga. We will first examine yoga as a transformative disciplined practice through close study of primary sources. Next we will focus on Yoga as presented in Patanjali's Yoga Sutras. We will then examine the ways and extent to which yoga has been transformed in both India and outside of India. To this end we will scrutinize the development of American(ized) "Yoga." We will address the legal complexities concerning ownership and appropriation as well as those concerning the teaching of "Yoga" in public schools and the establishment clause of the First Amendment. We will also devote several classes to actual yoga experiences where the students can learn some asana (postures) and movements.

RLGN 190. Sacred Space in Western Religions. 3 Units.
A significant problem facing all three of the great western religious traditions -- Judaism, Christianity and Islam -- is how to establish a sacred space on earth for the worship of a deity which cannot be contained. In many ways, architectural and artistic decisions about the location, internal layout, orientation and other features of such sacred spaces reflect deep presuppositions in each religion about the divine and how worship is to be effected in a human context. This course will be based around visits to a number of religious buildings to examine how one might understand and interpret such spaces.

RLGN 204. Introduction to Asian Religions. 3 Units.
Principal Asian religious traditions based on a study of classical sources. Classical Chinese thought, Hinduism, and Buddhism. Readings include selections from the works of Confucius, Mencius, Mo Tzu, Lao Tzu, Chuang Tzu, the Mahabharata, the Bhagavad Gita, and the early Buddhist canon.

RLGN 205. Catholic Imagination: Global Perspectives. 3 Units.
This course introduces students to the diversity and plurality within the Catholic tradition as a world religion. It focuses attention on the global perspectives of Catholicism in recognition of the fact that more than two-thirds of the world's Catholic population today are from the Global South or the Majority World. It will explore the challenges posed by, and the possibilities offered by, studying the Catholic imagination as expressed in diverse and pluralistic forms through both historical experiences and contemporary perspectives. Students will also investigate the impact and implications of missionary expansion, religious reception, colonialism and imperialism, globalization, migration, transnationalism, postcolonialism, and multiple belonging on the transformation of Catholicism from a Eurocentric religious tradition to a truly globalized world religion. Students will also consider how subaltern and minoritized Catholics' embrace of traditions is reshaping traditional understandings of the Catholic imagination. Students will gain familiarity with how the central themes of the Catholic imagination are expressed in different ethnic, social, and cultural contexts around the world and appreciate the complexities of, and understand the implications arising from the global, transnational, and postcolonial dimensions of the Catholic imagination.

RLGN 206. Religion and Ecology. 3 Units.
Historical and cross-cultural introduction to religious perspectives on nature and ecology, including Jewish, Christian, Hindu, Buddhist, and Native American texts and ritual practices. Themes include: ecology of chaos and complexity, urban ecology, wilderness, and ecological crises.

RLGN 207. Women and Religion. 3 Units.
Examination of feminist perspectives on religion, such as the status of women in Western and non-Western religions, the nature and purpose of religious beliefs and practices from the standpoint of religious and non-religious feminists, the current status of feminist philosophies of religion, and the efforts of feminists to transform traditional religions and to create new religions. Offered as RLGN 207 and WGST 207.

RLGN 208. Introduction to Western Religions. 3 Units.
Basic introduction to the three great monotheistic religions of the Western World: Christianity, Judaism, and Islam. All three of these religious traditions trace their roots to the faith of biblical Israel as revealed by a series of prophets including Noah, Abraham, and Moses. Each absorbed the philosophy and science of the Greco-Roman world and went on to both influence and struggle with each other. Many of the religious problems of the contemporary world, from Afghanistan to the Middle East to Yugoslavia, can be traced to tension within and between these religious groups. Offered as RLGN 208 and JDST 208. Counts as SAGES Departmental Seminar.

RLGN 209. Introduction to Biblical Literature. 3 Units.
This course is an introduction to the academic study of biblical literature, including Hebrew Scriptures ("Old Testament") and the New Testament. The literature will be studied in light of both ancient and contemporary historical contexts, with a particular emphasis on the roles it plays in American culture and politics today. Class sessions will be discussion oriented and will involve close, careful analysis and interpretation of texts. No background in religion is necessary. Evaluation will be based on class preparation and participation, regular short writing assignments, two exams, and a major paper.

RLGN 211. Great Books of Western Religion. 3 Units.
Students will engage with the major writings that have shaped Western religious traditions (Christianity, Judaism, Islam) from their earliest expressions until the present day. Readings include the foundational Scriptures (Hebrew Bible, New Testament, Quran) of each tradition, religious poetry and other writings from the Middle Ages, and modern writers on spiritually and religiously within each of these traditions. The course will be conducted as a seminar, in which students will read the selected original texts and will discuss their religious and spiritual meaning and significance in class. Each student will also prepare a final project based on the assigned authors or readings. Offered as RLGN 211 and JDST 211.

RLGN 212. Introduction to Christianity. 3 Units.
An introduction to the history, thought and culture of Christianity and its diverse traditions. Course will include field research with local Christian religious institutions.

RLGN 214. Introduction to Islam. 3 Units.
This course is an introduction to the beliefs, practices, sacred texts, and intellectual traditions of Islam. We will approach the many dimensions of Islam from the perspectives of religious studies. Our goal is to develop a foundational understanding of the core aspects of Islam, while critically analyzing how these features have been understood in Western academic discourse. Throughout the term, we will examine major developments in the history of Islam, underscoring the dynamic changes that the tradition has undergone in its 1400+ year history. We will also investigate how Muslim institutions developed in relation to diverse socioeconomic and cultural conditions, including Africa, the Americas, the Middle East, and Europe.
RLGN 215. Religion In America. 3 Units.
Survey of religious histories in North America, from the trans-Bering migrations to the present. Drawing from a variety of approaches such as social history, ritual studies, and institutional and doctrinal histories, this course charts the religious development of various groups including Native Americans, African Americans, Euro-Americans, and others.

RLGN 216. Hinduism I: The Vedic, Epic and Puranic Periods. 3 Units.
This course will provide an introduction to the Vedic, Epic and Puranic periods in the development of Hinduism. We will read a range of primary sources produced during these times. These texts were composed between 1500 BCE and the 5th century CE. The course has an emphasis on research and writing. We will not be examining contemporary issues or practice. The goal of the class is to gain detailed understanding of the kind of world(s) that were envisioned in these forms of early "Hinduism."

RLGN 217. Buddhism. 3 Units.
Buddhism is an important world religion that originated in India around 500 BCE. Subsequently, Buddhism spread to Central and East Asia. More recently, Buddhist traditions have been established in Europe and North America. Like Christianity and Islam, Buddhism is considered a "missionary" religion because its message has been actively propagated in cultural contexts outside its place of origin. Buddhist ideas and concepts have not only inspired religious practice, but have often provided the foundation for political, social, ethical, literary, artistic, and other modes of cultural expression. It is, therefore, difficult to understand those Asian cultures in which Buddhism is or has been important without understanding this religious tradition itself. This course examines concepts, symbols, and institutions central to Buddhist religious practice throughout its 2500 year history. We will focus on the Theravada and Mahayana Buddhist traditions as they developed in India, on the development of Pure Land and Zen traditions in China and Japan, and on Tibetan Buddhist traditions. We will also consider Buddhist perspectives on contemporary ethical issues.

RLGN 218. Faith and Politics in Islam. 3 Units.
An overview of the relationship between Islam as a religion and Islam as a political system and the effect of this relationship on Islamic society from its origin to the present time.

RLGN 219. Islam in America. 3 Units.
The United States is home to one of the most diverse Muslim communities in the world. Using a variety of primary and secondary sources, this course examines the rich history of Islam in the United States, from the 18th century to the present, as it relates to key moments within American politics, religion and culture, and to transnational developments in Islamic thought and practice. We will also explore important issues within contemporary Muslim communities, including gender, shari'a, and religious pluralism. In addition to studying the experiences of Muslim immigrants, students will also investigate the vital role of African-American Muslims and converts in the development of American Muslim institutions, beliefs and rituals. This course will also introduce students to the history of Islam in Cleveland, and provide them with the opportunity to contribute to original research on Muslim communities in our city.

RLGN 221. Indian Philosophy. 3 Units.
A survey of Indian philosophical thought with emphasis on the Vedas, early Hindu, and Jain literature. Offered as PHIL 221 and RLGN 221.

RLGN 222. African-American Religions. 3 Units.
This course is an exploration of the rich diversity of African American religions from the colonial period to the present. Attention will be given to key figures, institutional expressions, and significant movements in African American religious history. Major themes include African traditions in American religions, slavery and religion, sacred music, social protest, Black Nationalism in religion, Islam, African American women and religion, and black and womanist theologies. Course requirements will include field trips to local religious sites. Offered as ETHS 222 and RLGN 222.

RLGN 223. Religious Roots of Conflict in the Middle East. 3 Units.
The course is about the rhetoric and symbols used by various voices in the Middle East in the ongoing debate about the future shape of the region. For historical and cultural reasons, much of the discourse draws on religious symbolism, especially (although not exclusively) Islamic, Jewish and Christian. Because of the long and complex history of the region and the religious communities in it, virtually every act and every place is fraught with meaning. The course examines the diverse symbols and rhetorical strategies used by the various sides in the conflict and how they are understood both by various audiences within each community and among the different communities. Offered as JDST 223 and RLGN 223. Counts as SAGES Departmental Seminar.

RLGN 224. The Many Faces of Contemporary U.S. Catholicism. 3 Units.
This course explores the implications of immigration and changing demographics on the contemporary U.S. Catholic Church. The course investigates the diverse racial and ethnic communities that increasingly define U.S. Catholicism and includes a particular focus on Africans and African Americans, Latina/os, and Asian Americans. Attention will be given to the intersections of faith, ethnicity, race, and identity constructions in contemporary U.S. Catholicism, as well as issues of racism and racial justice in the U.S. Catholic Church and other social, cultural, and political dynamics that are shaping and transforming contemporary Catholic identities in the United States. Offered as ETHS 224 and RLGN 224. Counts as SAGES Departmental Seminar.

RLGN 229. Asian Christianity: Historical Perspectives. 3 Units.
The history of Christianity in Asia is as old as the history of Christianity itself. But while much has been told about Christianity as it grew from an obscure Jewish sect to mighty Western Christendom, not enough attention has been given to the Christianity which spread eastwards to Asia in the first millennium of the Christian era. This course seeks to correct the imbalance by introducing students to a historical exploration of the eastward movement of Christianity from Jerusalem to different parts of Asia. Topics include the Assyrian Church of the East in Persia, India and China, European Catholic and Protestant colonial missions in the age of European imperialism, and the Jesuit missions to Japan and China. By the end of the semester, students should have a good grasp of the historical encounter of Christianity with the political, social, cultural and religious realities of Asia. Its dialogue and confrontation with these realities and the forces that led to its growth and decline. Offered as HSTY 229 and RLGN 229. Counts as SAGES Departmental Seminar.
RLGN 232. DESI: Diaspora, Ethnicity, Southasia(n), Interrogate. 3 Units.
In this class we will interrogate the cultural identity(ies) and imagined community(ies) of the "South Asian" Diaspora. We will first examine taxonomy and categorization itself, as a methodological, philosophical, and political enterprise. We will then examine how such contrived categories have been applied to the so-called desis, loosely and broadly understood as members of the South Asian Diaspora. To this end we will scrutinize the development of American(ized) "Hinduism." the imagined location that desis have in North American racial and ethnic hierarchies, and the construction of assimilated, enculturated, and transnational imagined desi communities. Offered as RLGN 232, ETHS 232 and HSTY 232

RLGN 233. Introduction to Jewish Folklore. 3 Units.
Exploration of a variety of genres, research methods and interpretations of Jewish folklore, from antiquity to the present. Emphasis on how Jewish folk traditions and culture give us access to the spirit and mentality of the many different generations of the Jewish ethnic group, illuminating its past and informing the direction of its future development. Offered as ANTH 233, RLGN 233, and JDST 233.

RLGN 235. Religion and Visual Culture. 3 Units.
Cross-cultural introduction to complex relations between religion and seeing. Study of visual culture, sacred iconography, calligraphy, film, mass media, and avant-garde fashion. Extensive use of cultural resources in University Circle.

RLGN 237. Religion and Dance in South Asia. 3 Units.
This is an experimental interdisciplinary course in religion, dance, and South Asian studies. We will explore the performance of religion in bharata natyam, one storytelling dance form from South Asia. This dance style draws upon Hindu devotional (bhakti) allegories of sacred and profane love in its choreography. Lover and beloved, as the ideal relationship between God and the human, becomes the model for the performed relationship between heroes and heroines (nayaka-nayaki) danced on stages and, more recently, Bollywood screens. To this end we will examine primary and secondary sources on bharata natyam and aesthetic theory/classical dramatics. We will also observe dance performances in the greater Cleveland area. Offered as RLGN 237 and DANC 237.

RLGN 238. Alternative Altars: Folk Religion in America. 3 Units.
Taking a multidisciplinary approach, students will become familiar with the distinction between conventional and unconventional religions, with the history and personalities associated with new belief systems in America, and with the means, motivations and methods of generating faith communities. Students will come to understand the role of cultural anxieties, new technologies, changing roles, globalization and other social tensions in the formation and duration of alternative altars.

RLGN 240. The Heavens in Religion and Science. 3 Units.
Review of the relationships between scientific descriptions of the natural world and the religious and ethical implications drawn from those in Western civilizations. Introduction to the close cooperation between religion and science in the West until the modern period and review of the breakdown of that relationship in the past 200 years. Counts as SAGES Departmental Seminar.

RLGN 251. Perspectives in Ethnicity, Race, Religion and Gender. 3 Units.
This course is designed to introduce students to the study of ethnicity, Basic concepts such as race, gender, class, and identity construction will be examined. Students are encouraged to use the tools and perspectives of several disciplines to address the experiences of ethnic groups in the United States. Offered as ETHS 251 and RLGN 251.

RLGN 254. The Holocaust. 3 Units.
This class seeks to answer fundamental questions about the Holocaust: the German-led organized mass murder of nearly six million Jews and millions of other ethnic and religious minorities. It will investigate the origins and development of racism in modern European society, the manifestations of that racism, and responses to persecution. An additional focus of the course will be comparisons between different groups, different countries, and different phases during the Nazi era. Offered as HSTY 254, RLGN 254, ETHS 254, and JDST 254.

RLGN 260. Introduction to the Qur'an. 3 Units.
This course is an introduction to the Qur'an. For Muslims, the Qur'an is the inimitable word of God, and its influence has been both far-reaching and profound in various historical contexts. It introduces students to the text of the Qur'an, in English translation, providing a window into both Muslim interpretations of their scripture (from the early days of Islam to the present) and academic studies of the text. Students will approach the Qur'an as a living document, as text that is continually revisited and re-interpreted by Muslims, and used in various ritual contexts and in daily life. This course will explore theological and legal dimensions of the Qur'an, touching on issues of God's nature, Islamic ethics, the foundations of Islamic law, and gender roles.

RLGN 265. Malcolm and Martin. 3 Units.
An examination of the lives, religious thought, and ideological frameworks of Malcolm X and Martin Luther King, Jr. The course will investigate Malcolm X and Martin King's religious beliefs and activist strategies; the ideas and strategies of other civil rights and Black Nationalist leaders who influenced and challenged Martin and Malcolm's ideas on race, gender, class, and sexuality; and the historical antecedents for these strategies within nineteenth-century black religious, social, and political movements. Their impact on modern African American religious thought, American political culture, and international human rights movements will also be explored. Offered as ETHS 265 and RLGN 265.

RLGN 266. Women in the Bible: Ethnographic Approaches to Rite and Ritual, Story, Song, and Art. 3 Units.
Examination of women in Jewish and Christian Biblical texts, along with their Jewish, Christian (and occasionally Muslim) interpretations. Discussion of how these traditions have shaped images of, and attitudes toward, women in western civilization. Offered as RLGN 268, WGST 268, and JDST 268.

RLGN 270. Introduction to Gender Studies. 3 Units.
This course introduces women and men students to the methods and concepts of gender studies, women's studies, and feminist theory. An interdisciplinary course, it covers approaches used in literary criticism, history, philosophy, political science, sociology, anthropology, psychology, film studies, cultural studies, art history, and religion. It is the required introductory course for students taking the women's and gender studies major. Offered as ENGL 270, HSTY 270, PHIL 270, RLGN 270, SOCI 201, and WGST 201. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in SSSC, FSNA, FSSO, FSSY, FSTS, or FSCS.
RLGN 272. Morality and Mind. 3 Units.
Recent research in cognitive science challenges ethical perspectives founded on the assumption that rationality is key to moral knowledge or that morality is the product of divine revelation. Bedrock moral concepts like free will, rights, and moral agency also have been questioned. In light of such critiques, how can we best understand moral philosophy and religious ethics? Is ethics primarily informed by nature or by culture? Or is ethics informed by both? This course examines 1) ways in which cognitive science—and related fields such as evolutionary biology—impact traditional moral perspectives, and 2) how the study of moral philosophy and comparative ethics forces reconsideration of broad cognitive science theories about the nature of ethics. The course examines the concept of free will as a case study in applying these interpretive viewpoints. Interdisciplinary readings include literature from moral philosophy, religious ethics, cognitive science, and evolutionary biology. Offered as COGS 272, RLGN 272.

RLGN 273. Religion and Healing in the United States. 3 Units.
A cross-cultural exploration of the relationships between religion, health and healing in the United States. Through an interdisciplinary approach that includes religious studies, medical anthropology and ethnic/gender studies, the course investigates how persons interpret illness and suffering. Attention is also paid to how different groups utilized, or are served by, the health care system.

RLGN 280. Religion and Politics in the Middle East. 3 Units.
An in-depth look at the relationship between politics and religion in the Middle East. Students will spend the first week on the CWRU campus and the last three weeks in Israel, where time will be divided between classroom teaching, guest lectures, and "field trips" to important sites. Students will have the opportunity to interact directly with members of the region's diverse religious groups within the political, social, and cultural contexts in which they live. A final research paper will be required. Knowledge of Hebrew is not necessary. Offered as JDST 280 and RLGN 280.

RLGN 283. Muhammad: The Man and the Prophet. 3 Units.
The life of the Prophet Muhammad (c.470-632 CE) which was as crucial to the unfolding Islamic ideal as it is today. An examination of how he attempted to bring peace to war-torn Arabia by evolving an entirely new perspective of the human situation, guidance for human lives, and humans' relationship with God. The course will include Western perceptions of Islam, especially in light of September 11, 2001.

RLGN 284. Jesus Through Islamic Lens. 3 Units.
An introduction to an image of Jesus little known outside Arabic Islamic culture. It is an image that might be of interest to those who wish to understand how Jesus was perceived by a religious tradition which greatly revered him but rejected his divinity. The course will draw from various Islamic texts to provide a comprehensive selection of excerpts pertaining to the life and moral teachings of Jesus. Approaching Christ from an Islamic perspective, this course will offer the students a rare opportunity to understand the significance of Jesus in Islam and to gain a better understanding of the Islamic faith, not only as it contrasts with Christianity but also as it compares.

RLGN 299. Method and Theory in the Study of Religion. 3 Units.
This is an advanced course in method and theory in the study of religion and is designed for majors in religious studies. The goal is to strengthen the foundation in religious studies first obtained in RLGN 102 and to prepare students for projects to be completed and presented during the second semester in RLGN 399. (or RLGN 395 for honors). Class time will be devoted to lectures and discussions of a variety of authors, methods and topics. Particular readings will be assigned by the designated instructor. Students are expected to attend class regularly, complete assigned reading and participate in class discussions. Prereq: RLGN 102 and 9 credits in other RLGN courses.

RLGN 301. Ritual in Religion. 3 Units.
Drawing from a broad range of approaches and academic fields, this seminar offers an introduction to the study of ritual. The course has three main goals: (1) to help students become familiar with important theories of and approaches to ritual studies; (2) to explore a number of ritual practices from different cultures, from ancient priestly rites in the Bible to contemporary cockfights in Bali; and (3) to study and discuss several representations of ritual in contemporary literature and film.

RLGN 304. Representations of Black Women and Religion in Film. 3 Units.
In this course we will explore cinematic representations of black women and religion in film. Each week we will view a film in class. We will begin the class with the film Imitation of Life and then the course with The Help. Throughout the course we will analyze the ways in which notations of gender, sexuality, intimate violence, and modern notions of race and color, have informed representations of black women and religion in film. In addition, we will discuss how these representations, in turn, have influenced cultural ideas about black women in the Americas. Offered as RLGN 304, RLGN 404, WGST 304, and ETHS 304.

RLGN 305. Sanskrit Religious Texts. 3 Units.
Introduction to the Sanskrit language and culture through the reading of selected texts taken from the ancient religions of South Asia. Offered as CLSC 305 and RLGN 305.

RLGN 306. Interpreting Buddhist Texts. 3 Units.
Readings in translation of major texts from the Buddhist tradition. Special emphasis on problems of textual interpretation, historical context, Buddhist conceptions of the sacred, and Buddhist ethics.

RLGN 308. Daoism: Visual Culture, History and Practice. 3 Units.
This course explores developments in the visual culture, history and practices of Daoist religious traditions in China from the third to twentieth centuries. Our historically and conceptually structured examination draws upon a balance of visual, textual, and material sources, while considering the various approaches scholars have employed to understand the history and development of Daoist traditions. Topics include: sacred scriptures and liturgies, biographies and visual narratives, iconography and functions of the pantheon of gods and immortals, views of the self and the body, practices of inner alchemy and self-cultivation, thunder deities and exorcism, dietetics and medicine and modes of meditation and ritual. Offered as ARTH 308, ARTH 408, and RLGN 308.

RLGN 309. Advanced Sanskrit Religious Texts. 3 Units.
This class is a continuation of RLGN 305/CLSC 305, the introduction to the Sanskrit language and culture. In RLGN 309/CLSC 309 students will learn advanced Sanskrit grammar and syntax. Previous knowledge of Sanskrit is required. We will finish the lessons from Devanagari and Sanskrit script that we began in the introductory course. We will then translate select sections for the Bhagavad Gita. Offered as CLSC 309 and RLGN 309. Prereq: RLGN 305 or CLSC 305.
RLGN 310. Cognitive Science of Religion. 3 Units.
This course introduces theories and methods in the cognitive science of religion. Particular emphasis is placed on applying cognitive scientific concepts and theories to such religious issues as belief in deities, religious ritual, and morality. We examine such topics as the relationship of religious studies to evolution and cognition, cognitive theories or religious ritual, anthropomorphism and religious representation, religion as an evolutionary adaptation, and cognitive semantics and religious language. Course work includes student-led discussions, a research-intensive journal-length essay on a topic chosen in consultation with the Instructor, and presentation of research findings to the class. Course readings are taken from the humanities, the social sciences, and natural sciences. Offered as: COGS 310, COGS 410, RLGN 310, RLGN 410.

RLGN 311. Representations of Black Religion in Film. 3 Units.
In this course we will explore cinematic representations of black religion in the Americas and the Caribbean. Each week we will view a film representing diverse religious traditions such as Christianity, Candomble, Santeria, Vodou, and Islam. Films will include Cabin in the Sky, The Color Purple, Black Orpheus, The Serpent and the Rainbow, Malcolm X, Eve's Bayou, and The Princess and the Frog. Throughout the course we will analyze the ways in which notions of gender, the history of colonialism, modern notions of race, and geographical landscapes have informed representations of black religion in film. In addition, we will discuss how these representations, in turn, have influenced cultural ideas of black religion in the Americas. Offered as RLGN 311, ETHS 311, and RLGN 411. Prereq: RLGN 222 or ETHS 251 or ENGL 367 or by permission of Instructor.

RLGN 312. The Mythical Trickster. 3 Units.
Few literary figures have as wide a distribution, and as long a history, as the mythical Trickster. He is at once sacred and profane, creator and destroyer; an incorrigible duper who is always duped. Free of social and moral restraints he is ruled instead by passions and appetites, yet it is through his unprincipled behavior that morals and values come into being. How are we to interpret this amazing creature? Using folkloristic theories and ethnographic methods, we will come to understand the social functions and symbolic meanings of the cross-cultural Trickster, over time and across space.

RLGN 313. Topics in Biblical Literature. 3 Units.
A departmental "topics" seminar focused on advanced textual analysis and interpretation of particular biblical (including apocryphal) texts and the critical issues of method, theory, theology, and history that pertain to those texts. Reading assignments will be divided between close, exegetical analysis of small units of texts and the study of scholarly criticism of the same texts (commentaries, journal articles, critical notes). Evaluation will be based on class preparation and participation, weekly short papers, an exegetical paper focused on a particular pericope of the student's choice, and an interpretive paper based on exegesis of several related passages. Graduate students enrolled in the course as RLGN 413 will have the following additional requirements: (a) preliminary academic reading on the biblical material; (b) leadership/teaching of one seminar session on an academic theoretical or theological approach to the biblical text, including an additional meeting with the professor in preparation for that session; and (c) a longer final paper that critical engages the approach that was the focus of the seminar session s/he leads (15-20 pages, suitable for publication at an academic conference). Offered as RLGN 313 and RLGN 413. Prereq: RLGN 209 or permission of instructor.

RLGN 314. Mythologies of the Afterlife. 3 Units.
This course provides a multidisciplinary approach to the idea of an afterlife, and its manifestation in diverse cultures. We will examine the way varying views of the afterlife influence religion, popular culture and palliative care, and how human creativity has shaped the heavens, hells, hauntings and holidays of diverse populations over time and across space. Students will come to see the afterlife as an integral part of human history and experience, not only because it helps people die with better hope, but because it helps them to live more richly. Offered as RLGN 314 and JDST 314.

RLGN 315. Heresy and Dissidence in the Middle Ages. 3 Units.
Survey of heretical individuals and groups in Western Europe from 500 - 1500 A.D., focusing on popular rather than academic heresies. The development of intolerance in medieval society and the problems of doing history from hostile sources will also be explored. Offered as HSTY 315 and RLGN 315.

RLGN 317. Topics in Catholic Studies. 3 Units.
A departmental topics seminar for Catholic Studies that is focused on advanced interdisciplinary study of selected thematic issues in Catholic Studies. Students will read and discuss advanced critical readings and write book reports, response papers, and an in-depth research essay. Graduate students enrolled in the course as RLGN 417 will have additional readings, a longer final paper of publishable quality or presentation at an academic conference, and leadership/teaching of at least one seminar session under the supervision of the course instructor. Offered as RLGN 317 and RLGN 417. Prereq: RLGN 205.

RLGN 319. The Crusades. 3 Units.
This course is a survey of the history of the idea of "crusade," the expeditions of Western Europeans to the East known as crusades, the Muslim and Eastern Christian cultures against which these movements were directed, as well as the culture of the Latin East and other consequences of these crusades. Offered as HSTY 319 and RLGN 319.

RLGN 321. Advanced Indian Philosophy. 3 Units.
We will closely examine a limited number of texts in Jain, Hindu, and/or Buddhist philosophy. Our concern will be the methods, presuppositions, arguments, and goals of these schools and trajectories of thought. What were their theories on the nature of the person, the nature of reality, and the nature and process of knowing? What were the debates between the schools and the major points of controversy? We will spend the majority of time analyzing the arguments or positions as they are found in primary texts (in translation). We will rely on the primary sources found in Sarma Introduction to Classical Indian Philosophy as well as PDFs provided by the instructor. Students will read texts out loud in class and will be expected to comment on the passage or passages. Students are expected to use outside sources in their preparations. The goal of the class is to continue to learn how to make and write arguments against (or in support of) the various positions using the prasangika (reductio ad absurdum) method. The papers are rigorous ones and require the student to present the position and then to posit arguments against it, finding internal incoherences. This is a writing-intensive class. Students will continue to learn how to write as per the genre of Indian philosophy. Offered as RLGN 321 and PHIL 321. Prereq: RLGN 221 or PHIL 221.
RLGN 324. Landscapes and Pilgrimages: Spatial Theory in the Study of Religion. 3 Units.
This course employs spatial approaches and theories to examine the religious praxis and identities of individuals and communities. Working notions of space include physical, socio-political, cultural, imaginative, and ritual dimensions. We will examine the themes of mapping, memory and movement related to religious landscapes and geographies as well as issues related to social justice, gender, race, power, difference, and ecology. We will also investigate the spatial practices of individuals and communities. These practices may include pilgrimage to, and construction, of religious sites, ritual procession, walking, devotional practices, community activism, and artistic endeavors. Course requirements include student participation in field excursions to religious sites and spaces in the Cleveland area and the development of a photo essay or a mixed media project related to religious space. Offered as RLGN 324 and RLGN 424.

RLGN 325. Justice, Religion, and Society. 3 Units.
The ways in which several 20th-century American religious figures, both North and South American, have interpreted their religion as requiring them to struggle for a better society by using direct action to deal with issues of poverty, peace, and social justice. Introduction to writings of prominent social justice activists such as Dorothy Day, Daniel Berrigan, Thomas Merton, and others. Course includes service learning within the Cleveland area via association with structured institutions and programs engaged in social justice and urban poverty issues in order to investigate these from the inside.

RLGN 326. The Holocaust and the Arts. 3 Units.
This course explores artistic output during the Holocaust, as well as responses to the Holocaust in various forms, including music, art, architecture, film, and literature. Offered as MUHI 326, JDST 326, HSTY 326 and RLGN 326.

RLGN 330. Classical Jewish Religious Thought. 3 Units.
The thought of some major biblical and Rabbinic writings and of the classic age of medieval Jewish philosophy. Offered as JDST 330, PHIL 332, and RLGN 330.

RLGN 333. Philosophy of Religion. 3 Units.
Topics include: classical and contemporary arguments for God's existence; divine foreknowledge and human freedom; the problem of evil and theodicy; nature and significance of religious experience; mysticism; varieties of religious metaphysics; knowledge, belief and faith; nature of religious discourse. Readings from traditional and contemporary sources. Recommended preparation for PHIL 433 and RLGN 433: PHIL 101 or RLGN 102. Offered as PHIL 333, RLGN 333, PHIL 433, and RLGN 433. Prereq: PHIL 101 or RLGN 102.

RLGN 338. Black Women and Religion. 3 Units.
This course is an exploration of the multidimensional religious experiences of black women in the United States. These experiences will be examined within particular historical periods and across diverse social and cultural contexts. Course topics and themes include black women and slave religion, spirituality and folk beliefs, religion and feminism/womanist discourse, perspectives on institutional roles, religion and activism, and spirituality and the arts. Offered as: ETHS 339 and RLGN 338 and WGST 339.

RLGN 342. Mysticism: Sources, Methods, and Traditions. 3 Units.
Through an interdisciplinary approach that includes literary, historical and sociological methods, the course examines the history of Christian mysticism and the selected writings of mystics from diverse Christian traditions. We will explore the social and religious contexts in which these mystics speak, write and act; their impact on social, religious and political movements; and how perceptions of gender, race and power legitimate or delegitimate their claims of mystic knowledge. The course will highlight specific themes, issues and concepts such as religious practice, ritual, mystical itinerary, monasticism, disease and distress, deification, healing, asceticism, art, music, dance, ecology and the role of the body.

RLGN 343. Mysticism. 3 Units.
This class is an introduction to a central issue in the philosophy of religion concerning the nature of mystical and ineffable experiences. Are all mystical experiences the same? Is it possible to have an experience outside of language? What is the ontological and epistemological status of drug induced mystical experiences? Students will learn to write and present arguments against positions using the methods of philosophers of religion(s).

RLGN 345. Religion and Horror. 3 Units.
This seminar explores relations among religion, horror, and the monstrous in ancient scripture and contemporary horror. Course readings, discussions, and research projects approach the subject from two distinct but related directions: first, a focus on elements of horror and the monstrous in biblical and related ancient and ritual texts; second, an examination of religious dimensions in the modern horror, especially as found in representations of monstrosity in literature and film. Offered as RLGN 345 and RLGN 445. Prereq: RLGN 102.

RLGN 349. Biocultural Approaches to Religion. 3 Units.
This course studies religious beliefs and rituals from a biocultural perspective. A biocultural approach to religion is based on the idea that human religiosity is informed by both our evolutionary biological makeup and by our ability to construct culture to adapt to variable social worlds and environments. According to a biocultural view, humans are biologically constrained but have the cultural capacity to adapt to the world in a variety of ways. Thus, a biocultural approach to religion asserts that biology and culture operate in tandem and that both biological and cultural insights are required in order to understand and explain religious beliefs and practices. This course explores these assumptions and examines them against specific religious data. This course introduces students to major ideas, concepts, and questions that motivate biocultural approaches to religion. The course requires students to apply course material to a final research project that explores particular religious beliefs and/or practices in terms of the intersection of cultural choices and biological constraints. Students will present their research findings to the class. Students who take this course under the COGS designation are expected to engage substantively with the contemporary scientific study of the human mind in their research project and other course work. Offered as RLGN 349, RLGN 449 and COGS 349.

RLGN 350. Jewish Ethics. 3 Units.
An exploration of Jewish moral and ethical discourse. The first half of the course will be devoted to studying the structure and content of classical Jewish ethics on issues including marriage, abortion, euthanasia, and social justice. Students will read and react to primary Jewish religious texts. The second half of the course will focus on various modern forms of Judaism and the diversity of moral rhetoric in the Jewish community today. Readings will include such modern thinkers as Martin Buber and Abraham Joshua Heschel. Offered as JDST 350, RLGN 350, and RLGN 450. Counts as SAGES Departmental Seminar.
RLGN 352. Language, Cognition, and Religion. 3 Units.
This course utilizes theoretical approaches found in cognitive semantics -- a branch of cognitive linguistics -- to study the conceptual structures and meanings of religious language. Cognitive semantics, guided by the notion that conceptual structures are embodied, examines the relationship between conceptual systems and the construction of meaning. We consider such ideas as conceptual metaphor theory, conceptual blending, image schemas, cross-domain mappings, metonymy, mental spaces, and idealized cognitive models. We apply these ideas to selected Christian, Buddhist, and Chinese religious texts in order to understand ways in which religious language categorizes and conceptualizes the world. We examine both the universality of cognitive linguistic processes and the culturally specific metaphors, conceptual blends, image schemas, and other cognitive operations that particular texts and traditions utilize. Offered as RLGN 352, RLGN 452, COGS 352 and COGS 452.

RLGN 353. Hindu and Jain Bioethics. 3 Units.
This course will provide both an introduction to basic Hinduism and Jainism and an introduction to Hindu and Jain bioethics. We will ask: How would a Hindu or a Jain respond to issues concerning euthanasia, abortion, and other topics of controversy. Are these answers altered in the North American context or in the light of recent technological changes? Offered as RLGN 353, RLGN 453, BETH 353, and BETH 453.

RLGN 370. Structuralism and Anthropology of Religion. 3 Units.
The anthropological study of religion attempts to understand individual religions as social constructs. As such, it investigates the phenomenon of religion as a general pattern of human behavior. It asks, among other things, why there are religions at all and what common characteristics, if any, religions share. Among the central concepts are notions of the sacred and the way the sacred is marked through individual behaviors and communal structures. This course introduces the philosophical and cognitive background to the anthropological study of religion and traces the ways in which this method has evolved and been applied over the last century and a half. Special emphasis will be placed on more recent developments, such as Structuralism, which focuses especially on the underlying structures of religions and religious organizations. Offered as RLGN 370 and RLGN 470.

RLGN 371. Jews under Islam and Christianity. 3 Units.
This course examines the social and political status of Jews under Muslim and Christian rule since the Middle Ages. Themes include interfaith relations, Islamic and Christian beliefs regarding the Jews, Muslim and Christian regulation of Jewry, and the Jewish response. Offered as HSTY 371, JDST 371 and RLGN 371. Counts as SAGES Departmental Seminar.

RLGN 372. Anthropological Approaches to Religion. 3 Units.
The development of, and current approaches to, comparative religion from an anthropological perspective. Topics include witchcraft, ritual, myth, healing, religious language and symbolism, religion and gender, religious experience, the nature of the sacred, religion and social change, altered states of consciousness, and evil. Using material from a wide range of world cultures, critical assessment is made of conventional distinctions such as those between rational/irrational, natural/supernatural, magic/religion, and primitive/civilized. Recommended preparation: ANTH 102. Offered as ANTH 372, RLGN 372 and ANTH 472.

RLGN 373. History of the Early Church: First Through Fourth Centuries. 3 Units.
Explores the development of the diverse traditions of Christianity in the Roman Empire from the first through the fourth centuries C.E. A variety of New Testament and extra-Biblical sources are examined in translation. Emphasis is placed on the place of Christianity in the larger Roman society, and the variety of early Christian ideals of salvation, the Church, and Church leadership. Offered as HSTY 303 and RLGN 373.

RLGN 374. Reformation Europe, 1500-1650. 3 Units.
Origins and development of Protestantism, the Catholic Counter-Reformation, and the interaction between secular power and religious identity in Christian Europe. Offered as HSTY 309 and RLGN 374.

RLGN 388. Topics in Religion. 3 Units.
Critical assessment of selected topics of historical or current interest. Project must be accepted by a member of the department faculty prior to registration. Offered as RLGN 388 and RLGN 488.

RLGN 392. Independent Study. 1 - 3 Unit.
Up to three semester hours of independent study may be taken in a single semester. Must have prior approval of faculty member directing the project.

RLGN 394. Honors Research I. 3 Units.
Intensive study of a topic or problem leading to the writing of an honors thesis. Requires RLGN 102 plus 9 RLGN credits and department approval. Prereq: RLGN 102 plus 9 RLGN credits.

RLGN 395. Honors Research II. 3 Units.
Intensive study of a topic or problem leading to the writing of an honors thesis. By department approval only. Prereq: RLGN 394 and by departmental approval.

RLGN 399. Major/Minor Seminar. 3 Units.
Capstone course primarily for majors and minors in religious studies. Allows students to interact with peers and faculty, reflect critically, and integrate their learning experiences. Prepares students to continue their learning in the discipline and in the liberal arts. Subject matter varies according to student and faculty needs and perspectives. May be repeated once for up to six credit hours. Counts as SAGES Senior Capstone. Prereq: RLGN 299.

RLGN 401. Foundational Readings in Religious Studies. 3 Units.
Structured as an Independent Study, this course is meant to familiarize the student with the major classical works and thinkers that have shaped the modern field of Religious Studies. Students will meet on a regular basis with the Instructor to discuss the theories and methods described in the literature.

RLGN 404. Representations of Black Women and Religion in Film. 3 Units.
In this course we will explore cinematic representations of black women and religion in film. Each week we will view a film in class. We will begin the class with the film Imitation of Life and then the course with The Help. Throughout the course we will analyze the ways in which notations of gender, sexuality, intimate violence, and modern notions of race and color, have informed representations of black women and religion in film. In addition, we will discuss how these representations, in turn, have influenced cultural ideas about black women in the Americas. Offered as RLGN 304, RLGN 404, WGST 304, and ETHS 304.

RLGN 408. Problem of Historical Jesus. 3 Units.
Understanding of Jesus by nascent Christianity and by modern scholarship.
RLGN 410. Cognitive Science of Religion. 3 Units.
This course introduces theories and methods in the cognitive science of religion. Particular emphasis is placed on applying cognitive scientific concepts and theories to such religious issues as belief in deities, religious ritual, and morality. We examine such topics as the relationship of religious studies to evolution and cognition, cognitive theories or religious ritual, anthropomorphism and religious representation, religion as an evolutionary adaptation, and cognitive semantics and religious language. Course work includes student-led discussions, a research-intensive journal-length essay on a topic chosen in consultation with the Instructor, and presentation of research findings to the class. Course readings are taken from the humanities, the social sciences, and natural sciences. Offered as: COGS 310, COGS 410, RLGN 310, RLGN 410.

RLGN 411. Representations of Black Religion in Film. 3 Units.
In this course we will explore cinematic representations of black religion in the Americas and the Caribbean. Each week we will view a film representing diverse religious traditions such as Christianity, Candomble, Santeria, Vodou, and Islam. Films will include Cabin in the Sky, The Color Purple, Black Orpheus, The Serpent and the Rainbow, Malcolm X, Eve's Bayou, and The Princess and the Frog. Throughout the course we will analyze the ways in which notions of gender, the history of colonialism, modern notions of race, and geographical landscapes have informed representations of black religion in film. In addition, we will discuss how these representations, in turn, have influenced cultural ideas of black religion in the Americas. Offered as RLGN 311, ETHS 311, and RLGN 411.

RLGN 413. Topics in Biblical Literature. 3 Units.
A departmental "topics" seminar focused on advanced textual analysis and interpretation of particular biblical (including apocryphal) texts and the critical issues of method, theory, theology, and history that pertain to those texts. Reading assignments will be divided between close, exegetical analysis of small units of texts and the study of scholarly criticism of the same texts (commentaries, journal articles, critical notes). Evaluation will be based on class preparation and participation, weekly short papers, an exegetical paper focused on a particular pericope of the student's choice, and an interpretive paper based on exegesis of several related passages. Graduate students enrolled in the course as RLGN 413 will have the following additional requirements: (a) preliminary academic reading on the biblical material; (b) leadership/teaching of one seminar session on an academic theoretical or theological approach to the biblical text, including an additional meeting with the professor in preparation for that session; and (c) a longer final paper that critical engages the approach that was the focus of the seminar session s/he leads (15-20 pages, suitable for publication at an academic conference). Offered as RLGN 313 and RLGN 413.

RLGN 417. Topics in Catholic Studies. 3 Units.
A departmental topics seminar for Catholic Studies that is focused on advanced interdisciplinary study of selected thematic issues in Catholic Studies. Students will read and discuss advanced critical readings and write book reports, response papers, and an in-depth research essay. Graduate students enrolled in the course as RLGN 417 will have additional readings, a longer final paper of publishable quality or presentation at an academic conference, and leadership/teaching of at least one seminar session under the supervision of the course instructor. Offered as RLGN 317 and RLGN 417.

RLGN 424. Landscapes and Pilgrimages: Spatial Theory in the Study of Religion. 3 Units.
This course employs spatial approaches and theories to examine the religious praxis and identities of individuals and communities. Working notions of space include physical, socio-political, cultural, imaginative, and ritual dimensions. We will examine the themes of mapping, memory and movement related to religious landscapes and geographies as well as issues related to social justice, gender, race, power, difference, and ecology. We will also investigate the spatial practices of individuals and communities. These practices may include pilgrimage to, and construction, of religious sites, ritual procession, walking, devotional practices, community activism, and artistic endeavors. Course requirements include student participation in field excursions to religious sites and spaces in the Cleveland area and the development of a photo essay or a mixed media project related to religious space. Offered as RLGN 324 and RLGN 424.

RLGN 430. Genealogies of Religious Otherness. 3 Units.
Concepts of otherness pervade recent theories of religion. More or less related to one another, many of these concepts are borrowed from fields other than academic religious studies. This seminar explores the genealogies of otherness in theoretical discourse as they relate to religion. In the course of this seminar, our researches and discussions will address several key issues in academic religious studies, including: psychological and sociological processes of projection and their roles in the construction and deconstruction of religious identity; the significance of gender, sexuality, and ethnicity to these projections; concepts of otherness in mystical religious thought and experience; and the interrelations of order and chaos, figuring and disfiguring within religious ideas, institutions, and practices, interrelations that challenge common theoretical perspectives that treat religion primarily if not exclusively as a means of establishing order against chaos and as a force of social and ideological structure legitimation.

RLGN 433. Philosophy of Religion. 3 Units.
Topics include: classical and contemporary arguments for God's existence; divine foreknowledge and human freedom; the problem of evil and theodicy; nature and significance of religious experience; mysticism; varieties of religious metaphysics; knowledge, belief and faith; nature of religious discourse. Readings from traditional and contemporary sources. Recommended preparation for PHIL 433 and RLGN 433: PHIL 101 or RLGN 102. Offered as PHIL 333, RLGN 333, PHIL 433, and RLGN 433.

RLGN 440. Insiders and Outsiders in the Study of Religion. 3 Units.
This course will provide an introduction to one of the most important theoretical and methodological issues in the social sciences and in religious studies, namely, the epistemic authority of the insider and of the outsider. We will read books and articles, both classical and contemporary, on the topic. My goal is to place students at the center of a contemporary debate in the study of religion. We will also examine both hypothetical and actual communities that uphold insider epistemologies.

RLGN 445. Religion and Horror. 3 Units.
This seminar explores relations among religion, horror, and the monstrous in ancient scripture and contemporary horror. Course readings, discussions, and research projects approach the subject from two distinct but related directions: first, a focus on elements of horror and the monstrous in biblical and related ancient mythic and ritual texts; second, an examination of religious dimensions in the modern horror, especially as found in representations of monstrosity in literature and film. Offered as RLGN 345 and RLGN 445.
RLGN 449. Biocultural Approaches to Religion. 3 Units.
This course studies religious beliefs and rituals from a biocultural perspective. A biocultural approach to religion is based on the idea that human religiosity is informed by both our evolutionary biological makeup and by our ability to construct culture to adapt to variable social worlds and environments. According to a biocultural view, humans are biologically constrained but have the cultural capacity to adapt to the world in a variety of ways. Thus, a biocultural approach to religion asserts that biology and culture operate in tandem and that both biological and cultural insights are required in order to understand and explain religious beliefs and practices. This course explores these assumptions and examines them against specific religious data. This course introduces students to major ideas, concepts, and questions that motivate biocultural approaches to religion. The course requires students to apply course material to a final research project that explores particular religious beliefs and/or practices in terms of the intersection of cultural choices and biological constraints. Students will present their research findings to the class. Students who take this course under the COGS designation are expected to engage substantively with the contemporary scientific study of the human mind in their research project and other course work. Offered as RLGN 349, RLGN 449 and COGS 349.

RLGN 450. Jewish Ethics. 3 Units.
An exploration of Jewish moral and ethical discourse. The first half of the course will be devoted to studying the structure and content of classical Jewish ethics on issues including marriage, abortion, euthanasia, and social justice. Students will read and react to primary Jewish religious texts. The second half of the course will focus on various modern forms of Judaism and the diversity of moral rhetoric in the Jewish community today. Readings will include such modern thinkers as Martin Buber and Abraham Joshua Heschel. Offered as JDST 350, RLGN 350, and RLGN 450. Counts as SAGES Departmental Seminar.

RLGN 452. Language, Cognition, and Religion. 3 Units.
This course utilizes theoretical approaches found in cognitive semantics -- a branch of cognitive linguistics -- to study the conceptual structures and meanings of religious language. Cognitive semantics, guided by the notion that conceptual structures are embodied, examines the relationship between conceptual systems and the construction of meaning. We consider such ideas as conceptual metaphor theory, conceptual blending, Image schemas, cross-domain mappings, metonymy, mental spaces, and idealized cognitive models. We apply these ideas to selected Christian, Buddhist, and Chinese religious texts in order to understand ways in which religious language categorizes and conceptualizes the world. We examine both the universality of cognitive linguistic processes and the culturally specific metaphors, conceptual blends, image schemas, and other cognitive operations that particular texts and traditions utilize. Offered as RLGN 352, RLGN 452, COGS 352 and COGS 452.

RLGN 453. Hindu and Jain Bioethics. 3 Units.
This course will provide both an introduction to basic Hinduism and Jainism and an introduction to Hindu and Jain bioethics. We will ask: How would a Hindu or a Jain respond to issues concerning euthanasia, abortion, and other topics of controversy. Are these answers altered in the North American context or in the light of recent technological changes? Offered as RLGN 353, RLGN 453, BETH 353, and BETH 453.

RLGN 460. Approaches to the Study of Urban Religion. 3 Units.
This course will introduce students to basic concepts and tools used in sociology of religion drawing upon works from various theorists and sociologists of religion such as Nancy Ammerman, Peter Berger, and Robert Wuthnow. The course will analyze the relationship between the role and structure of religion in North America and the larger historical, cultural and social landscape. Utilizing the city of Cleveland as a resource, students will apply the tools and concepts learned to explicate how religious organizations impact, and are impacted by, urban environments.

RLGN 470. Structuralism and Anthropology of Religion. 3 Units.
The anthropological study of religion attempts to understand individual religions as social constructs. As such, it investigates the phenomenon of religion as a general pattern of human behavior. It asks, among other things, why there are religions at all and what common characteristics, if any, religions share. Among the central concepts are notions of the sacred and the way the sacred is marked through individual behaviors and communal structures. This course introduces the philosophical and cognitive background to the anthropological study of religion and traces the ways in which this method has evolved and been applied over the last century and a half. Special emphasis will be placed on more recent developments, such as Structuralism, which focuses especially on the underlying structures of religions and religious organizations. Offered as RLGN 370 and RLGN 470.

RLGN 488. Topics in Religion. 3 Units.
Critical assessment of selected topics of historical or current interest. Project must be accepted by a member of the department faculty prior to registration. Offered as RLGN 388 and RLGN 488.

RLGN 601. Special Research. 1 - 6 Unit.
Project must be accepted by a member of the department faculty prior to registration. Prereq: Graduate standing.

RLGN 651. Thesis M.A.. 1 - 9 Unit.
Project must be accepted by a member of the department faculty prior to registration.

Department of Sociology

The Department of Sociology offers programs leading to the Bachelor of Arts, Master of Arts, and Doctor of Philosophy degrees.

Sociologists investigate basic human and social processes and change in an increasingly complex world. Sociological research addresses important and fascinating questions about many aspects of social life, ranging from the “micro-level” of everyday experience to the “macro-level” of cross-societal comparisons. Our faculty research strengths include the sociology of health and medicine, the sociology of age and the life course, social inequalities, and research methods. Our undergraduate program also offers concentrations in crime, law and justice; gender, work and family; health, medicine and aging; and social inequality.

Many sociology majors participate in field-based learning experiences, both through their classes and through their involvement in faculty research projects. The Department of Sociology encourages interaction between students and faculty by offering many opportunities for individualized study and research. Our department has a long history of combining academic excellence and leadership in research with a friendly, student-centered culture, for both graduate and undergraduate students.

Especially with the increase in diversity in our society, many employers look favorably on the breadth of knowledge and perspective provided
by majoring in sociology. Our program prepares students for rigorous graduate and professional programs, whether in sociology or in such fields as medicine, law, public health, and social work, as well as for interesting jobs. Graduates of our program are working in positions in research institutions, medicine, private industry, and the public sector.

Undergraduate Programs

Major
The major in sociology has been designed to serve the different educational goals of undergraduates: general education, pre-professional training, postgraduate employment, and preparation for graduate school. The major requires a minimum of 30 hours of course work. All majors complete the common core requirements, plus electives:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCI 101</td>
<td>Introduction to Sociology</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 300</td>
<td>Modern Sociological Thought</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 303</td>
<td>Social Research Methods</td>
<td>3</td>
</tr>
<tr>
<td>PSCL 282</td>
<td>Quantitative Methods in Psychology</td>
<td>3</td>
</tr>
<tr>
<td>or</td>
<td>STAT 201 Basic Statistics for Social and Life Sciences</td>
<td>3</td>
</tr>
</tbody>
</table>

An additional 18 hours of electives, consisting of any six courses in sociology

Total Units 33

SOCI 375 Independent Study is available to selected majors in their junior or senior year.

Majors have the option of choosing a general sociology curriculum or one of four concentrations:
1. Crime, Law and Justice
2. Gender, Work and Family
3. Health, Medicine and Aging
4. Social Inequality

Students may choose four courses within any of the following specializations for a concentration in that area:

Crime, Law and Justice Concentration

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCI 204</td>
<td>Criminology</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 250</td>
<td>Law &amp; Society: Law, Rights and Policy</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 320</td>
<td>Delinquency and Juvenile Justice</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 333</td>
<td>Sociology of Deviant Behavior</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 349</td>
<td>Social Inequality</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 360</td>
<td>The Sociology of Law</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 366</td>
<td>Racial Inequality and Mass Imprisonment in the US</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 374</td>
<td>Using Law to Designate Public-Private Boundaries for Social Policies</td>
<td>3</td>
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</tbody>
</table>

Gender, Work, and Family Concentration

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>SOCI 201</td>
<td>Introduction to Gender Studies</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 208</td>
<td>Dating, Marriage, and Family</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 222</td>
<td>Gender in U.S. Society</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 228</td>
<td>Sociology of Sexuality</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 275</td>
<td>Lives in Medicine: Becoming and Being a Physician</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 326</td>
<td>Gender, Inequality, and Globalization</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 370</td>
<td>Sociology of the Family</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 372</td>
<td>Work and Family: U.S. and Abroad</td>
<td>3</td>
</tr>
</tbody>
</table>

Health, Medicine and Aging Concentration

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCI 203</td>
<td>Human Development: Medical and Social</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 264</td>
<td>Body, Culture and Disability</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 275</td>
<td>Lives in Medicine: Becoming and Being a Physician</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 311</td>
<td>Health, Illness, and Social Behavior</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 313</td>
<td>Sociology of Stress and Coping</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 319</td>
<td>Sociology of Institutional Care</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 345</td>
<td>Sociology of Mental Illness</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 361</td>
<td>The Life Course</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 365</td>
<td>Health Care Delivery</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 369</td>
<td>Aging in American Society</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 377</td>
<td>Population Dynamics and Changing Societies</td>
<td>3</td>
</tr>
</tbody>
</table>

Social Inequality Concentration

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCI 113</td>
<td>Critical Problems in Modern Society</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 201</td>
<td>Introduction to Gender Studies</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 202</td>
<td>Race and Ethnic Minorities in The United States</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 203</td>
<td>Human Development: Medical and Social</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 228</td>
<td>Sociology of Sexuality</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 320</td>
<td>Delinquency and Juvenile Justice</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 326</td>
<td>Gender, Inequality, and Globalization</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 328</td>
<td>Urban Sociology</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 347</td>
<td>Sociology of Education</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 349</td>
<td>Social Inequality</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 366</td>
<td>Racial Inequality and Mass Imprisonment in the US</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 372</td>
<td>Work and Family: U.S. and Abroad</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 374</td>
<td>Using Law to Designate Public-Private Boundaries for Social Policies</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 380</td>
<td>Social Movements and Social Change</td>
<td>3</td>
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</tbody>
</table>

SAGES Participation
In conjunction with the SAGES program, the department offers two special seminars, SOCI 325 Departmental Seminar in Sociology: Great Books and SOCI 392 Senior Capstone Experience. These seminars fulfill SAGES requirements but are NOT requirements for the major. They may, however, be counted toward the 30 hours for the sociology major or the 15 hours for the minor.

Departmental Honors
Juniors majoring in sociology with a 3.4 overall GPA and a 3.6 GPA in sociology are invited to apply for the department’s honors program, which consists of an intensive, year-long investigation of a research problem under the guidance of a faculty member. Students will earn credit through registration in SOCI 397 Honors Studies and SOCI 398 Honors Studies. Admission to honors work is by faculty approval.

The opportunity to join Alpha Kappa Delta (AKD), the national sociology honors fraternity, is available to junior or senior sociology majors.
Membership requires a 3.0 GPA in sociology and a 3.3 GPA overall. In addition, the student must have completed at least 4 sociology courses.

Integrated Graduate Studies
The Department of Sociology participates in the Integrated Graduate Studies Program (http://bulletin.case.edu/undergraduatesstudies/gradprofessional/#accelerationtowardgraduatedegreetext). Students in the program are able to obtain BA and MA degrees simultaneously. Interested students should note the general requirements and the admission procedures in the appropriate section of this bulletin and may consult the department for further information.

Minor
The minor consists of 15 credit hours in sociology, including:

<table>
<thead>
<tr>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>SOCI 101</td>
<td>Introduction to Sociology</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 300</td>
<td>Modern Sociological Thought</td>
<td>3</td>
</tr>
<tr>
<td>Three additional electives, at least two of which must be 300-level courses</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td><strong>Total Units</strong></td>
<td></td>
<td><strong>15</strong></td>
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</table>

Graduate Programs
The Department of Sociology offers graduate training leading to the Doctor of Philosophy degree. Students may petition for a Master of Arts degree once they fulfill the requirements outlined below. Sociology of Age and the Life Course, Medical Sociology, Social Inequality and Research Methods are the major areas of emphasis in the department.

Master of Arts
To receive the Master of Arts degree, a student must successfully complete 27 credit hours of course work.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>SOCI 400</td>
<td>Development of Sociological Theory</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 406</td>
<td>Logic of Social Inquiry</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 443</td>
<td>Medical Sociology</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 449</td>
<td>Social Inequality</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 469</td>
<td>Aging in American Society</td>
<td>3</td>
</tr>
<tr>
<td>One of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOCI 401</td>
<td>Contemporary Sociological Theory</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 407</td>
<td>Social Statistics</td>
<td>3</td>
</tr>
<tr>
<td>Three general electives in sociology</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td><strong>Total Units</strong></td>
<td></td>
<td><strong>27</strong></td>
</tr>
</tbody>
</table>

In addition, the student must pass one written comprehensive examination in Sociology of Age and the Life Course, Medical Sociology, Social Inequality or Research Methods.

Doctor of Philosophy
The Doctor of Philosophy degree is awarded upon the completion of all requirements of the School of Graduate Studies and the following departmental requirements.

1. Completion of 63 credit hours beyond the Bachelor of Arts degree, including 18 credits of SOCI 701 Dissertation Ph.D. (dissertation hours).

<table>
<thead>
<tr>
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<th>Units</th>
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<tbody>
<tr>
<td>SOCI 400</td>
<td>Development of Sociological Theory</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 401</td>
<td>Contemporary Sociological Theory</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 406</td>
<td>Logic of Social Inquiry</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 509</td>
<td>Advanced Statistical Analysis</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 514</td>
<td>Qualitative Methods/Field Research</td>
<td>3</td>
</tr>
<tr>
<td>Four electives (2 each) in aging and the life course, medical sociology, social inequality or research methods</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Two general electives in sociology</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>18 credit hours of dissertation</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td><strong>Total Units</strong></td>
<td></td>
<td><strong>63</strong></td>
</tr>
</tbody>
</table>

2. In addition, the student must pass two written comprehensive examinations in Sociology of Age and the Life Course, Medical Sociology, Social Inequality or Research Methods and successfully defend the dissertation.

Research Programs
The Elderly Care Research Center
The Elderly Care Research Center (ECRC) conducts research projects focusing on theory-based and public policy-relevant issues in aging and medical sociology. Current projects relate to physical and mental health outcomes of stress, coping, cancer survivorship, and adaptation to frailty in later life. Research projects have been funded by the National Institute of Aging (NIA), the National Cancer Institute (NCI), and the National Institute of Nursing Research. In addition to conducting quantitative surveys and in-depth qualitative interviews with community-dwelling elders, researchers at the ECRC are also engaged in an NCI-funded intervention to help elderly patients communicate more effectively with their doctors.

The Center has been the recipient of an NIA Merit Award for a long-term study of very old residents of a retirement community. This research seeks to understand health promotion, proactive adaptation, and maintenance of wellness in late life. ECRC serves as a laboratory for student research. Collaborative and cross-national research involves colleagues from multiple disciplines at universities in Israel, Hungary, Britain, and Germany.

Cancer Survivors Research Program
The Cancer Survivors Research Program (CSRP) investigates the quality of life of older adults who face the dual vulnerability of aging and the long-term effects of having survived cancer. The research also focuses on the health disparities and the psycho-social factors related to race and gender. Formally started in September 1998, the program of research has benefitted from extramural funding through a number of NIH (NCI/ NIA) research grants. Gary Deimling serves as program director and is assisted by colleagues in the Department of Sociology and the Case School of Medicine. As with many other research programs within the department and the university at large, the CSRP also serves as a teaching facility, training graduate students in the many methodological and theoretical aspects of socio-medical research. The program enables graduate students in sociology to gain hands-on experience in a formal research setting while putting their course work into practice.

Comparative-Historical Analysis of Children’s Rights
The Children’s Rights Index (CRI), developed by Brian Gran, is an innovative measure of the status of children’s rights in more than 190
countries for 2004. With funding from the National Science Foundation, this project is now replicating the CRI for five-year intervals during the period 1984 to 2009.

Past studies of children’s rights have focused on violations of particular rights, and on specific countries where children’s rights are frequently or severely violated. What has been lacking is systematic scholarship on the various kinds of children’s rights that exist, across countries and over time. This project will examine factors that promote or hinder children’s rights. A short-term objective is to provide evidence on the status of children’s rights. A long-term objective is to use the CRI to determine whether stronger rights lead to superior outcomes for children.

**Cumulative Dis/Advantage Research Group: Trajectories of Inequality Across the Life Course**

Across societies, inequalities in well-being and health exist throughout the life course but tend to increase with age. How does such inequality come about? What are its manifestations and consequences? The Cumulative Dis/Advantage (CDA) Research Group analyzes the social processes that create inequalities across multiple dimensions of well-being and health, including physical function, mental health, and longevity. The group also examines social policies that are intended to ameliorate these inequalities, such as Medicare. Professor Montez investigates why educational attainment has become one of the strongest predictors of longevity in the United States and how U.S. state policies affect the health of their residents. Professor Kelley-Moore examines the influence of social and economic circumstances over the life course on later-life health disparities, particularly those related to race/ethnicity and disability. Professor Dannefer is interested in identifying basic sociological processes that contribute to CDA and understanding their interrelation at macro-, meso-, and micro-levels of analysis.

**Learning from Those Who Know: Action Research and Reform Efforts in Long-term Care**

This project responds to the need to reform and restructure long-term care by incorporating the perspectives, insights, and expertise of those whom such reforms are intended to serve, yet who often have little voice in the reform process: the residents themselves. Using the method of participatory action research, the project assembles research groups consisting of residents, staff, family members, and researchers who meet weekly to discuss life in the facility and to identify areas where change could benefit those who live (or work) there.

**Masculinities and Fatherhood in Marginalized Urban Communities**

This research project is an examination of the perceptions and practices of masculinity among a group of incarcerated fathers participating in a fatherhood program. Using observations and interviews in the first phases of the project, researchers are exploring a range of masculinities, including conventional forms of masculinity that emphasize, for instance, the provider role in the family; street/protest forms that attempt to preserve autonomy and mastery through criminal behavior, social distance, or appearances of control and strength; and alternative forms that promote family and community advocacy and solidarity.

**The Solidarity Refugee Oral History Project**

This study is recording the oral histories of members of the Solidarity trade union in Poland (Niezależny Samorządny Związek Zawodowy „Solidarność”) who received refugee or asylee status in the United States in the 1980s. The oral histories document their experiences in communist Poland as children, involvement in Solidarity, decision to emigrate, political activities and occupations in the U.S., and decision to return to Poland or not post-1989. This study analyzes the extent to which economic and political factors are intertwined in decisions to emigrate (and return to the homeland) as well as how normative life transitions are shaped by social movements and migration.

**Department Faculty**

**Dale Dannefer, PhD**
(Rutgers University)

Selah Chamberlain Professor of Sociology and Chair

Aging and the life course; theory; work and family; research methods

**Timothy Black, PhD**
(University of Massachusetts-Amherst)

Associate Professor

Social inequality; poverty; urban sociology; qualitative research methods

**Gary Deimling, PhD**
(Bowling Green State University)

Professor

Medical sociology; sociology of aging; family sociology

**Mary Patrice Erdmans, PhD**
(Northwestern University)

Associate Professor

Social inequality; race and ethnicity; immigration; qualitative research methods; gender

**Brian Gran, PhD, JD**
(Northwestern University; Indiana University-Bloomington)

Associate Professor

Sociology of law; comparative sociology; health care policy; human rights

**Susan W. Hinze, PhD**
(Vanderbilt University)

Associate Professor

Medical sociology; social inequality, sex and gender; work and family

**Eva Kahana, PhD**
(University of Chicago)

Distinguished University Professor and Pierce T. and Elizabeth D. Robson Professor of the Humanities

Sociology of aging; medical sociology; social factors in stress and coping

**Jessica Kelley-Moore, PhD**
(Purdue University)

Associate Professor

Health disparities; sociology of disability; sociology of the life course; race/ethnicity

**Cassii Pittman, PhD**
(Harvard University)

Assistant Professor

Race & Ethnic Relations, Social Stratification & Inequality, Sociology of Consumption, Economic Sociology, Consumption, and Qualitative Methods
Secondary Faculty

David E. Biegel, PhD
(University of Maryland, Baltimore)
*Henry Zucker Professor, Jack, Joseph and Morton Mandel School of Applied Social Sciences*

Kurt Stange, MD, PhD
(University of North Carolina)
*Professor, Department of Epidemiology and Biostatistics, School of Medicine*

Anna Maria Santiago, PhD
(University of Wisconsin-Milwaukee)
*Leona Bevis and Marguerite Haynam Professor of Community Development, Jack, Joseph and Morton Mandel School of Applied Social Sciences*

Aloen Townsend, PhD
(University of Michigan)
*Professor, Jack, Joseph and Morton Mandel School of Applied Social Sciences*

Adjunct Faculty

Gunhild Hagestad, PhD
(University of Minnesota)
*Professor of Sociology, Agder University College; Senior Researcher, NOVA (Norwegian Social Research)*

Linda Noelker, PhD
(Case Western Reserve University)
*Associate Director of Research, Benjamin Rose Institute on Aging*

Courses

**SOCI 101. Introduction to Sociology. 3 Units.**
This course examines the basic principles that underlie how sociologists look at the world: “The Sociological Imagination”. It addresses the basic questions: How is social order possible and how does change occur? The course is designed as a foundation for further study in field of sociology and related disciplines. It introduces the student to the role that culture and social institutions play in modern society and examines important concepts such as socialization, deviance, social control, patterned inequalities and social change. These concepts are discussed in the context of both contemporary and historical social theories. Additionally, the student will be introduced to the methods of inquiry used by practicing sociologists.

**SOCI 113. Critical Problems in Modern Society. 3 Units.**
Focus is on major social problems present in large, complex, industrial societies. Topics include environmental problems, poverty, drug addiction, social deviance, and alienation.

**SOCI 201. Introduction to Gender Studies. 3 Units.**
This course introduces women and men students to the methods and concepts of gender studies, women's studies, and feminist theory. An interdisciplinary course, it covers approaches used in literary criticism, history, philosophy, political science, sociology, anthropology, psychology, film studies, cultural studies, art history, and religion. It is the required introductory course for students taking the women's and gender studies major. Offered as ENGL 270, HSTY 270, PHIL 270, RLGN 270, SOCI 201, and WGST 201. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSTS, or FSCS.

**SOCI 202. Race and Ethnic Minorities in The United States. 3 Units.**
This is a survey course that looks at the relations between racial and ethnic relations in the United States from an historical and contemporary perspective. We will look at relations between: European colonists and native Americans; whites and blacks during the period of slavery, Jim Crow, the civil rights era and contemporary period; immigrants at the turn of the 20th and 21st century; Mexicans and Puerto Ricans; and the pan-ethnic groups such as Latinos, Asian Americans, and Arab Americans. We examine the origins of racial/ethnic hierarchies, the social construction of identities, and stratification of racial and ethnic groups. I teach from a macro perspective that examines larger structural forces (e.g., colonization, industrialization, and immigration) to explain inter-group relations, and a constructionist perspective to understand how power manufactures and maintains the social meaning of identities (looking at stereotypes and hegemonic discourse). Students who have received credit for SOCI 302 may not receive credit for SOCI 202.

**SOCI 203. Human Development: Medical and Social. 3 Units.**
Social influences on health and illness across the lifespan. Social determinants of health and health behavior, and delivery of health care. Guest lecturers from the medical school and other health care providers address professional practice issues across the lifespan. Issues include: new approaches to birthing; adolescent substance abuse: myths and realities of AIDS; risk factors of diseases in middle age; menopause, cognition and aging-Alzheimer's disease; problems in care of elderly; medical ethic of death and dying.

**SOCI 204. Criminology. 3 Units.**
What is crime and to what extent does crime affect you? This course will investigate the nature and extent of crime, theories on the causes of crime, types of crime and criminals, and the efforts society makes to cope with and prevent criminal behavior.

**SOCI 208. Dating, Marriage, and Family. 3 Units.**
What is the family today? How has it changed over the last century? How will it change in the future? This course aims to answer these questions as it explores the influences of work, education, government, health and religion on today's changing families. The course considers the factors that affect mate selection. It also examines parenting, roles of husbands and wives, and family dysfunction, and divorce.

**SOCI 222. Gender in U.S. Society. 3 Units.**
The focus of this course is on unique and convergent experiences of men and women in U.S. society. Different social expectations and opportunities encountered by men and women in the context of marriage and the family, work settings, and in informal organizations will be addressed. Legislation and social policy dealing with gender issues will be considered. Offered as SOCI 222 and WGST 222.
SOCI 228. Sociology of Sexuality. 3 Units.
This course analyzes the issues of sex and sexuality from a sociological point of view. It is centered on the notion that what we consider to be ‘normal’ or ‘natural’ about sex and sexuality is, in reality, socially constructed. One’s viewpoint on the issues surrounding sexuality are influenced by the social context in which they live, as opposed to the purely biological viewpoint that presupposes some sense of normalcy or naturalness regarding sexual relations. A range of topics will be covered, including readings that discuss the variations of sexuality and the notions of sexual “deviance” in order to explore the cultural and societal variation that exists along the lines of gender, race, ethnicity, sexual orientation, age and disability. Offered as SOCI 228 and WGST 228.

SOCI 250. Law & Society: Law, Rights and Policy. 3 Units.
How do rights, including human rights, fit in the legal system and society? We will ask how legal actors, like judges and lawyers, think about rights compared to non-lawyers. We will (try to!) observe court hearings in an Ohio Appellate Court and a local small claims court. We will closely examine legal institutions, such as correctional facilities. We will benefit from hearing experts, local, national, and international, discuss how “law” works and whether rights are useful to making change. We will hear from a law school professor on how law school works and what the practice of law is like.

SOCI 255. Special Topics. 1 - 3 Unit.
Courses taught as special topics seminars focus on selected areas of study in sociology. They tend to be more specialized and emphasis is placed upon a sociological examination of one social institution (such as the media) or on one historical period (such as the ‘60s).

SOCI 264. Body, Culture and Disability. 3 Units.
This course examines the ways that the body is constructed through culture, media, and policy and how that, in turn, defines disability. Students will explore the socio-historical shifts in views and treatment of the body, as a way to understand how this is used to classify, marginalize and contain social differences. We trace these trends through the American Freak Show to present day Disability Determination Processes in the Social Security Administration. We further explore how historical perspectives of the body “carry forward” through social institutions such as health care, religion and education.

SOCI 275. Lives in Medicine: Becoming and Being a Physician. 3 Units.
This course applies a sociological approach to medical profession. Medical sociology emerged as a distinct field of study in the 1950s in part due to prominent studies of medical education such as The Student Physician by Robert K. Merton and Howard Becker's Boys in White. Since then, sociologists and other social scientists have written extensively about how issues of race, gender, aging and ethnicity are tied to issues of medical education, medical training, medical socialization and physician decision-making. Using a life course perspective, this course will examine how lives in medicine change over time; in particular, we'll study changing workforce patterns, physician satisfaction, and burnout. Other topics to be covered include contemporary ethical issues and alternative professional health careers. The course provides an overview of how medicine and medical practice have a profound influence on--and are influenced by--social, cultural, political and economic forces. In short, you'll become familiar with how scholars outside of medicine cast a sociological gaze on the profession.

SOCI 300. Modern Sociological Thought. 3 Units.
The most profound commentary of industrial society began in the middle of the nineteenth century with thinkers such as Durkheim, Marx, and Max Weber. Students will read the work of these scholars as it appeared in the original sources. They thoughtfully address concepts such as social integration and alienation, crime and punishment, and the social impact of modernization. The course is of special relevance to students in the social sciences, but is also recommended for students in other fields who wish to understand the social context in which professional lives will be conducted. Prereq: SOCI 101 and Sophomore standing.

SOCI 303. Social Research Methods. 3 Units.
Principles of making causal inferences about human behavior; problem formulation and research design; measurement of sociological concepts; data collection and analysis methods; evaluation of research findings. Prereq: SOCI 101 and Sophomore standing.

SOCI 310. The Individual in Society. 3 Units.
This course focuses on the relationship between individuals and the societies in which they live. Influences of values and culture on individuals' selves and identities are discussed as well as how individuals attach meaning to personal life experiences and histories in the context of society at large. Offered as SOCI 310 and SOCI 410. Prereq: SOCI 101.

SOCI 311. Health, Illness, and Social Behavior. 3 Units.
This course considers the role of social factors (e.g., poverty, occupational and family structure) on health and illness. Discussion will concentrate on the role of health promotion (e.g., anti-smoking campaigns), social behavior and lifestyle in health and health care use. Considerable attention is given to understanding health careers and professions and their role in the health of societies and individuals. Offered as SOCI 311 and SOCI 411. Prereq: SOCI 101.

SOCI 313. Sociology of Stress and Coping. 3 Units.
This course will focus attention on human stress throughout the lifespan and its role in personal health and well-being. There have been exciting advances in recent years in understanding the nature of stress in everyday life as well as elements of extreme stress. Trauma is experienced by many people due to normative events such as illness and bereavement or natural and man-made disasters such as crime or war. Coping strategies and social supports which ameliorate negative impact of stress will be considered. Offered as SOCI 313 and SOCI 413. Prereq: SOCI 101 and Sophomore standing.

SOCI 315. Comparative-Historical Sociology. 3 Units.
This seminar offers participants an introduction to comparative methodological approaches to social science research. Participants will employ hands-on approaches to learning about and using innovative methods to apply their knowledge to social science questions. Our starting point will be key questions social scientists must contend with in pursuing answers to questions about social phenomena. After turning to “classic” texts in comparative research, we will study various components of comparative research. We will then focus on configurational comparative methods. Offered as SOCI 315 and SOCI 415. Prereq: SOCI 101 and Sophomore standing.

SOCI 319. Sociology of Institutional Care. 3 Units.
This course focuses on converging issues of theory, research, and practice in general hospitals, mental hospitals, nursing homes, hospices, and correctional institutions. The ecology of institutions and the adaptation of individuals within institutions will also be considered. There will be field trips to institutional facilities. Offered as SOCI 319 and SOCI 419. Prereq: SOCI 101 and Sophomore standing.
SOCI 320. Delinquency and Juvenile Justice. 3 Units.
The primary focus of this course is on acquainting the student with the nature and the extent of juvenile delinquency. Accordingly, theoretical approaches to delinquency causation and the prevention, control, and treatment of delinquent behavior in society are addressed. Important aspects of juvenile justice procedures, policy, and practice are examined, and the early history of the juvenile justice system and the many changes occurring over the years are discussed. Prereq: SOCI 101.

SOCI 325. Departmental Seminar in Sociology: Great Books. 3 Units.
This course fulfills the SAGES requirement of a Departmental Seminar. It focuses on close readings of contemporary classics in sociology, analytical writing and intensive seminar-type discussion. The course examines theoretical perspectives and methodological issues in sociology such that students are able to investigate, analyze and present research findings in written form. Research is always an inherently collaborative process and thus the course will utilize seminar-style discussions to formulate and examine ideas. The seminar will focus on topics germane to a critical reading of books that inform our understanding of large and small group processes as well as individual experiences. Students will be introduced to the sociological imagination as an overarching frame work to examine groundbreaking classical and contemporary books on topics such as health and aging, gender, work and family, social inequality and crime and delinquency, guided by the instructor of record. Readings will provide a sociological perspective for understanding and assessing macro- and micro-level interactions as well as encourage and stimulate critical thinking. Counts as SAGES Departmental Seminar.

SOCI 326. Gender, Inequality, and Globalization. 3 Units.
Using a sociological perspective, this course examines how major societal institutions, including the economy, polity, medicine, religion, education and family, are structured to reproduce gendered inequalities across the globe. Attention is given to the intersections of race/ethnicity, social class, gender and sexuality in social systems of power and privilege. Of critical importance is how gender figures in the relationship between Economic North and Economic South countries. We will elucidate how gender norms vary by culture and exert profound influence on the daily, lived experiences of women and men. The course will be informed by recent scholarship on feminism, women's movements, and globalization. Offered as SOCI 326 and WGST 326. Prereq: SOCI 101 or permission of program director.

SOCI 328. Urban Sociology. 3 Units.
The goal of this course is to acquaint the student with the realities and the possibilities of our urban society. Theories and applications of urban sociology interpreting city life and structure are reviewed. The transformation of the urban landscape, the emergence of cities, urban life, urban problems, and urban planning are explored. Issues related to finances, schooling, transportation, the infrastructure of the city, growth and decline, urban poverty, the homeless, crime, pollution, as well as the policy issues and questions such concerns provoke are studied. Key aspects of social science theories and research findings about the nature of spatial, economic and social relationships in cities in developed and developing countries will be analyzed, illuminating some of the processes of urban growth, social transition, and change. Offered as SOCI 328 and SOCI 428. Prereq: SOCI 101.

SOCI 333. Sociology of Deviant Behavior. 3 Units.
Sociological approaches to causes of deviant behavior, and social psychology of deviance are studied. Illustrations range from juvenile delinquency to scientific misconduct and cover both criminal and noncriminal forms of deviance. Prereq: SOCI 101.

SOCI 336. Institutional Care: Research and Reform. 3 Units.
This course is designed to provide an introduction to the nature of long term care in the USA and to contemporary issues of reform and culture change. It also provides an introduction to techniques for studying nursing home culture, and for assessing culture changes. The issues and problems of long term care are well documented and the need for changing practices of long-term care is so widely recognized and deeply felt that several initiatives for “changing the culture” of long term care have gained national notoriety and rapid momentum. While laudatory, such efforts are inevitable criticized on numerous grounds, including cost, philosophy and vision, and lack of research evidence to support claims of success. The course is designed to provide an introduction to these debates in the scientific literature and in popular culture, and will provide an opportunity to develop skills in structured observation and action research. Offered as SOCI 336 and SOCI 436.

SOCI 338. Seminar and Practicum in Adolescents. 3 Units.
Supervised field placement and attendance in early childhood, child, and adolescent settings including preschools, schools, hospitals, and neighborhood centers. This class is used to fulfill requirements by the Ohio Department of Education teacher licensure program. Recommended preparation: PSCL 101, EDUC 301, EDUC 304, and permission of program director. Offered as EDUC 338, PSCL 338, and SOCI 338.

SOCI 345. Sociology of Mental Illness. 3 Units.
Focus is on social construction of mental health and illness and sociology of emotions. Social determinants of psychological distress will be discussed along with social stigma associated with mental illness. Institutional and community options for care of the mentally ill will be considered along with the impact of recent social movements of deinstitutionalization and independent living. Offered as SOCI 345 and SOCI 445. Prereq: SOCI 101 and junior/senior standing.

SOCI 347. Sociology of Education. 3 Units.
This course provides an introduction to the field of sociology of education, which might be more properly called sociology of schooling. We will examine the development of schools historically and competing paradigms for understanding the place of school in society. Major theoretical perspectives concerning the nature and consequences of schools for individuals and for societies will be reviewed. Issues of individual opportunity - including how it is organized by race, class, and gender - will be covered, as well as issues institutional dynamics - including tracking, testing and so-called crisis and reform. Offered as SOCI 347 and SOCI 447. Prereq: SOCI 101 and junior or senior standing.

SOCI 349. Social Inequality. 3 Units.
This course discusses classical theory and contemporary research on the mechanisms of power that produce inequalities in income, wealth, education, privilege, and occupational prestige and are manifest in racial, ethnic, gender, age, health, and sexual hierarchies. Offered as SOCI 349 and SOCI 449. Prereq: SOCI 101 and Sophomore standing.

SOCI 355. Special Topics. 3 Units.
One or more sections each semester focusing on selected areas of study in sociology. Offered as SOCI 335 and SOCI 455.
SOCI 360. The Sociology of Law. 3 Units.
This course will focus on the role of rights in the U.S. legal system and society. In particular, we will consider three questions. The first is how do rights fit in the legal system and society? Second, how have different social groups used and thought about rights? Third, how do legal actors like judges and lawyers think about rights compared to non-lawyers? Offered as SOCI 360 and SOCI 460. Prereq: SOCI 101 and Sophomore standing.

SOCI 361. The Life Course. 3 Units.
Individual experiences and transitions over the life course are considered as the result of societal, cultural, psychological, biological, and historical influences. Developmental issues of childhood, adolescence, young adulthood, middle years and late life are discussed in the context of social expectations, challenges, and opportunities. Emphasis is placed on theoretical readings. Offered as SOCI 361 and SOCI 461. Prereq: SOCI 101 and Sophomore standing.

SOCI 364. Disability and Society. 3 Units.
This course considers and examines the relationship between disability and society. The course covers how we define, represent, and react to disability in modern society. This includes an analysis of stigma and discrimination. We also explore the timing and experience of disability from a life-course perspective. Finally, we examine the political, social, and economic influences on disability, including the Disability Rights movement. Offered as SOCI 364 and SOCI 464. SOCI 101 and Sophomore standing.

SOCI 365. Health Care Delivery. 3 Units.
Health care in the U.S. may be approaching a critical cross-road. Limiting care to older persons and the chronically ill has been proposed as a means to combat rising costs and limited access to health care. What are the alternatives to health care rationing? Socialized medicine? National health insurance? This course deals with issues of cost, quality, and access to health care in the United States and other societies. It considers how solutions by other societies can provide directions for the organization of health care in the U.S. Offered as SOCI 355 and SOCI 455. Prereq: SOCI 101 and Sophomore standing.

SOCI 366. Racial Inequality and Mass Imprisonment in the US. 3 Units.
This course examines the relationship between racial inequality and mass imprisonment in the U.S. It begins by exploring the role of prisons in the Jim Crow south, with a particular focus on convict-leasing practices, and then turns to the north to examine the social forces that created the black urban ghetto and concentrated black urban poverty. The course also examines the impact that these same social forces have had on Puerto Ricans. We will then explore a series of topics including urban poverty and crime, the war on drugs, the politics of mass incarceration, the prospects that mass incarceration has become the new Jim Crow, and the effects that mass incarceration has had on voting rights, urban communities, families and children. We will conclude with a discussion of varying decarceration arguments, strategies, movements, and achievements. Prereq: SOCI 101 or SJUS 100.

SOCI 369. Aging in American Society. 3 Units.
Considers the position and participation of aged adults in American society. Sociological perspectives through which to interpret the aging process and old age; social policies; intergenerational relations; lifestyles and how they affect participation of the aged in American society; dying and death serve as major themes. Offered as SOCI 369 and SOCI 469. Prereq: SOCI 101 and Sophomore standing.

SOCI 370. Sociology of the Family. 3 Units.
This course provides the theoretical and methodological foundation for conducting family research. It also reviews the most current research in the sociology of the family arena such as intergenerational issues, ethnicity and gender, and family transitions. Offered as SOCI 370 and SOCI 470. Prereq: SOCI 101 and Sophomore standing.

SOCI 372. Work and Family: U.S. and Abroad. 3 Units.
Covers the impact on human lives of the interface between work and family; the different ways gender structures the experience of work and family depending upon racial and ethnic background, social class, age, and partner preference; the impact of historical context on work-family experiences; work-family policies in the United States and other countries. Offered as SOCI 372, WGST 372, and SOCI 472. Prereq: SOCI 101 and Sophomore standing.

SOCI 374. Using Law to Designate Public-Private Boundaries for Social Policies. 3 Units.
This course studies law and the public-private dichotomy. With a basis in important research on the sociology of law, it considers three questions: 1) What is the impact of “law” on the boundary separating the public and private sectors? 2) How does “law” designate which actors and institutions belong to the public and private sectors? 3) Is the public-private dichotomy adequate for sociological analyses of law and its influences? If not, what alternatives to the public-private dichotomy can we offer? Offered as SOCI 374 and SOCI 474. Prereq: SOCI 101.

SOCI 375. Independent Study. 1 - 3 Unit.
Prereq: SOCI 101 and SOCI 300.

SOCI 377. Population Dynamics and Changing Societies. 3 Units.
Population and social structure are inextricably linked, as changes in one elicit changes in the other. Social demography, as a discipline, examines these linkages through the systematic study of the size, composition, and distribution of populations and their relationship to the social, political and economic organization of societies. This course will pay particular attention to mortality, morbidity and health, fertility, family and household organization, and migration as the major processes of population change. The population dynamics of the United States will be emphasized, with select comparisons to developing and developed countries. Offered as SOCI 377 and SOCI 477. Prereq: SOCI 101 or equivalent; 9 hours in SOCI, ANTH, or ECON.

SOCI 380. Social Movements and Social Change. 3 Units.
This course will introduce students to the theories of social movements and collective action. We look at the conditions that create grievances in democracies, how grievances get translated into collective action, and what types of collective actions are successful for bringing about social change. We discuss a variety of movements in the U.S. in the 20th century to illustrate these theories and concepts. Prereq: SOCI 101 or requisites not met permission.

SOCI 381. City as Classroom. 3 Units.
In this course, the city is the classroom. We will engage with the urban terrain. We will meet weekly off-campus, interact with community members, and interface—both literally and figuratively—with the city as a way to examine the linkages between historical, conceptual, and contemporary issues, with particular attention paid to race and class dynamics, inequality, and social justice. This course will have four intersecting components, primarily focusing on American cities since the 1930s: the social and physical construction of urban space, the built environment, life and culture in the city, and social movements and grassroots struggles. Offered as HSTY 381, POSC 381, SOCI 381, HSTY 481, POSC 481, and SOCI 481.
SOCI 392. Senior Capstone Experience. 3 Units.
SOCI 392 represents the completion of an independent study paper involving exploration of a sociology topic to be chosen in consultation with the student's capstone advisor. The student will interact regularly with the faculty advisor who will review their progress on the project. This project allows for original thought and for the tailoring of the research to the student's interests. The student will integrate theory, methods and social issues as he/she applies critical thinking skills and insights to the analysis of some aspects of a subject chosen from any of the following subfields and concentrations: Gerontology, Social Inequality, Medical Sociology, Crime and Delinquency, The Life Course, Education, Work and Family, Sociology of Law, and Deviance. The Capstone Project has both a written and an oral component. Following the submission of the Capstone paper, the student will give a presentation of the project at the Senior Capstone fair, or another forum chosen by the department. Counts as SAGES Senior Capstone. Prereq: SOCI 101, SOCI 300, SOCI 303, and STAT 201 or PSCL 282.

SOCI 397. Honors Studies. 3 Units.
Intensive investigation of research or conceptual problem; original work under supervision of faculty member. Limited to senior majors. Prereq: Senior status.

SOCI 398. Honors Studies. 3 Units.
Intensive investigation of research on conceptual problem; original work under supervision of faculty member. Limited to senior majors.

SOCI 400. Development of Sociological Theory. 3 Units.
This course examines in detail the works of the major social theorists of the 19th and 20th centuries. It is intended to integrate their ideas with the social and historical milieu from which they were born. Questions of intergroup conflict vs. cooperation, interactions between economic, familial, religious, and political institutions, and the development of the self as a function of larger social processes are addressed. Such celebrated figures as Marx, Weber, and Durkheim, as well as modern thinkers will be presented and discussed. Prereq: Graduate standing.

SOCI 401. Contemporary Sociological Theory. 3 Units.
Current viewpoints in sociological theory are explored using contrasting theoretical perspectives.

SOCI 406. Logic of Social Inquiry. 3 Units.
The first of a two-semester series in social research methodology. Students will learn how to interpret and conduct social science research. The two-semester course covers problem formulation, the logic of causal inference, measurement models, research designs, sampling, data collection, and data analysis.

SOCI 407. Social Statistics. 3 Units.
The second of a two-semester series in social research methodology. (See SOCI 406.) Prereq: SOCI 406.

SOCI 410. The Individual in Society. 3 Units.
This course focuses on the relationship between individuals and the societies in which they live. Influences of values and culture on individuals' selves and identities are discussed as well as how individuals attach meaning to personal life experiences and histories in the context of society at large. Offered as SOCI 310 and SOCI 410.

SOCI 411. Health, Illness, and Social Behavior. 3 Units.
This course considers the role of social factors (e.g., poverty, occupational and family structure) on health and illness. Discussion will concentrate on the role of health promotion (e.g., anti-smoking campaigns), social behavior and lifestyle in health and health care use. Considerable attention is given to understanding health careers and professions and their role in the health of societies and individuals. Offered as SOCI 311 and SOCI 411.

SOCI 413. Sociology of Stress and Coping. 3 Units.
This course will focus attention on human stress throughout the lifespan and its role in personal health and well-being. There have been exciting advances in recent years in understanding the nature of stress in everyday life as well as elements of extreme stress. Trauma is experienced by many people due to normative events such as illness and bereavement or natural and man-made disasters such as crime or war. Coping strategies and social supports which ameliorate negative impact of stress will be considered. Offered as SOCI 313 and SOCI 413.

SOCI 415. Comparative-Historical Sociology. 3 Units.
This seminar offers participants an introduction to comparative methodological approaches to social science research. Participants will employ hands-on approaches to learning about and using innovative methods to apply their knowledge to social science questions. Our starting point will be key questions social scientists must contend with in pursuing answers to questions about social phenomena. After turning to "classic" texts in comparative research, we will study various components of comparative research. We will then focus on configurational comparative methods. Offered as SOCI 315 and SOCI 415.

SOCI 419. Sociology of Institutional Care. 3 Units.
This course focuses on converging issues of theory, research, and practice in general hospitals, mental hospitals, nursing homes, hospices, and correctional institutions. The ecology of institutions and the adaptation of individuals within institutions will also be considered. There will be field trips to institutional facilities. Offered as SOCI 319 and SOCI 419.

SOCI 428. Urban Sociology. 3 Units.
The goal of this course is to acquaint the student with the realities and the possibilities of our urban society. Theories and applications of urban sociology interpreting city life and structure are reviewed. The transformation of the urban landscape, the emergence of cities, urban life, urban problems, and urban planning are explored. Issues related to finances, schooling, transportation, the infrastructure of the city, growth and decline, urban poverty, the homeless, crime, pollution, as well as the policy issues and questions such concerns provoke are studied. Key aspects of social science theories and research findings about the nature of spatial, economic and social relationships in cities in developed and developing countries will be analyzed, illuminating some of the processes of urban growth, social transition, and change. Offered as SOCI 328 and SOCI 428.
SOCI 436. Institutional Care: Research and Reform. 3 Units.
This course is designed to provide an introduction to the nature of long term care in the USA and to contemporary issues of reform and culture change. It also provides an introduction to techniques for studying nursing home culture, and for assessing culture changes. The issues and problems of long term care are well documented and the need for changing practices of long-term care is so widely recognized and deeply felt that several initiatives for "changing the culture" of long term care have gained national notoriety and rapid momentum. While laudatory, such efforts are inevitable criticized on numerous grounds, including cost, philosophy and vision, and lack of research evidence to support claims of success. The course is designed to provide an introduction to these debates in the scientific literature and in popular culture, and will provide an opportunity to develop skills in structured observation and action research. Offered as SOCI 336 and SOCI 436.

SOCI 443. Medical Sociology. 3 Units.
Course covers theories, research methods, and problems in sociology of medicine. Topics include social epidemiology, health and illness behavior, and sick role. Structures and functions of delivery systems and their interrelationships with other social institutions are discussed.

SOCI 445. Sociology of Mental Illness. 3 Units.
Focus is on social construction of mental health and illness and sociology of emotions. Social determinants of psychological distress will be discussed along with social stigma associated with mental illness. Institutional and community options for care of the mentally ill will be considered along with the impact of recent social movements of deinstitutionalization and independent living. Offered as SOCI 345 and SOCI 445.

SOCI 447. Sociology of Education. 3 Units.
This course provides an introduction to the field of sociology of education, which might be more properly called sociology of schooling. We will examine the development of schools historically and competing paradigms for understanding the place of school in society. Major theoretical perspectives concerning the nature and consequences of schools for individuals and for societies will be reviewed. Issues of individual opportunity - including how it is organized by race, class, and gender - will be covered, as well as issues institutional dynamics - including tracking, testing and so-called crisis and reform. Offered as SOCI 347 and SOCI 447.

SOCI 449. Social Inequality. 3 Units.
This course discusses classical theory and contemporary research on the mechanisms of power that produce inequalities in income, wealth, education, privilege, and occupational prestige and are manifest in racial, ethnic, gender, age, health, and sexual hierarchies. Offered as SOCI 349 and SOCI 449.

SOCI 455. Special Topics. 3 Units.
One or more sections each semester focusing on selected areas of study in sociology. Offered as SOCI 335 and SOCI 455.

SOCI 460. The Sociology of Law. 3 Units.
This course will focus on the role of rights in the U.S. legal system and society. In particular, we will consider three questions. The first is how do rights fit in the legal system and society? Second, how have different social groups used and thought about rights? Third, how do legal actors like judges and lawyers think about rights compared to non-lawyers? Offered as SOCI 360 and SOCI 460.

SOCI 461. The Life Course. 3 Units.
Individual experiences and transitions over the life course are considered as the result of societal, cultural, psychological, biological, and historical influences. Developmental issues of childhood, adolescence, young adulthood, middle years and late life are discussed in the context of social expectations, challenges, and opportunities. Emphasis is placed on theoretical readings. Offered as SOCI 361 and SOCI 461.

SOCI 464. Disability and Society. 3 Units.
This course considers and examines the relationship between disability and society. The course covers how we define, represent, and react to disability in modern society. This includes an analysis of stigma and discrimination. We also explore the timing and experience of disability from a life-course perspective. Finally, we examine the political, social, and economic influences on disability, including the Disability Rights movement. Offered as SOCI 364 and SOCI 464.

SOCI 465. Health Care Delivery. 3 Units.
Health care in the U.S. may be approaching a critical cross-road. Limiting care to older persons and the chronically ill has been proposed as a means to combat rising costs and limited access to health care. What are the alternatives to health care rationing? Socialized medicine? National health insurance? This course deals with issues of cost, quality, and access to health care in the United States and other societies. It considers how solutions by other societies can provide directions for the organization of health care in the U.S. Offered as SOCI 355 and SOCI 455.

SOCI 466. Promoting Health Across Boundaries. 3 Units.
This course examines the concepts of health and boundary spanning and how the synergy of the two can produce new, effective approaches to promoting health. Students will explore and analyze examples of individuals and organizations boundary spanning for health to identify practice features affecting health, compare and contrast practices and approaches, and evaluate features and context that promote or inhibit boundary spanning and promoting health. Offered as MPH 466, EPBI 466, SOCI 466, NURS 466 and BETH 466. Prereq: Graduate student status or instructor consent.

SOCI 469. Aging in American Society. 3 Units.
Considers the position and participation of aged adults in American society. Sociological perspectives through which to interpret the aging process and old age; social policies; intergenerational relations; lifestyles and how they affect participation of the aged in American society; dying and death serve as major themes. Offered as SOCI 369 and SOCI 469.

SOCI 470. Sociology of the Family. 3 Units.
This course provides the theoretical and methodological foundation for conducting family research. It also reviews the most current research in the sociology of the family arena such as intergenerational issues, ethnicity and gender, and family transitions. Offered as SOCI 370 and SOCI 470.

SOCI 472. Work and Family: U.S. and Abroad. 3 Units.
Covers the impact on human lives of the interface between work and family; the different ways gender structures the experience of work and family depending upon racial and ethnic background, social class, age, and partner preference; the impact of historical context on work-family experiences; work-family policies in the United States and other countries. Offered as SOCI 372, WGST 372, and SOCI 472.
SOCI 474. Using Law to Designate Public-Private Boundaries for Social Policies. 3 Units.
This course studies law and the public-private dichotomy. With a basis in important research on the sociology of law, it considers three questions: 1) What is the impact of "law" on the boundary separating the public and private sectors? 2) How does "law" designate which actors and institutions belong to the public and private sectors? 3) Is the public-private dichotomy adequate for sociological analyses of law and its influences? If not, what alternatives to the public-private dichotomy can we offer? Offered as SOCI 374 and SOCI 474. Prereq: SOCI 101.

SOCI 477. Population Dynamics and Changing Societies. 3 Units.
Population and social structure are inextricably linked, as changes in one elicit changes in the other. Social demography, as a discipline, examines these linkages through the systematic study of the size, composition and distribution of populations and their relationship to the social, political and economic organization of societies. This course will pay particular attention to mortality, morbidity and health, fertility, family and household organization, and migration as the major processes of population change. The population dynamics of the United States will be emphasized, with select comparisons to developing and developed countries. Offered as SOCI 377 and SOCI 477. Prereq: SOCI 101 or equivalent; 9 hours in SOCI, ANTH, or ECON.

SOCI 481. City as Classroom. 3 Units.
In this course, the city is the classroom. We will engage with the urban terrain. We will meet weekly off-campus, interact with community members, and interface--both literally and figuratively--with the city as a way to examine the linkages between historical, conceptual, and contemporary issues, with particular attention paid to race and class dynamics, inequality, and social justice. This course will have four intersecting components, primarily focusing on American cities since the 1930s: the social and physical construction of urban space, the built environment, life and culture in the city, and social movements and grassroots struggles. Offered as HSTY 381, POSC 381, SOCI 381, HSTY 481, POSC 481, and SOCI 481.

SOCI 509. Advanced Statistical Analysis. 3 Units.
Research in social epidemiology, health service research and other applied fields increasingly demands an understanding of social research methodology. This seminar exposes students to state of the art analyses of social science data including: data preparation, factor analysis, regression and structural equation modeling. Students are provided the opportunity to interpret and critically evaluate the methodology used in journal articles, with an emphasis on data analytical techniques. Students will analyze data sets using SPSS and EQS. Prereq: STAT 401 or SOCI 406, and SOCI 407.

SOCI 514. Qualitative Methods/Field Research. 3 Units.
Students explore the theoretical foundations of qualitative social research. The course is designed to introduce and provide experience with a range of data generation strategies and analytic skills. The ethnographic techniques of semi-structured interviewing and participant-observation receive particular attention.

SOCI 525. Multilevel Modeling. 3 Units.
This course is designed to provide an introduction to multilevel, or hierarchical, regression models, and to explore its two primary applications in the social sciences: (1) studies of individuals nested within groups; (2) studies of repeated observations nested within individuals. After taking this course, students should be able to discuss the components of the multilevel model, including random intercepts & slopes, variances at levels 1 & 2, within- and between-group regressions. Students should also be able to conduct independent statistical analysis using Stata from initial tests of assumptions and hypothesis testing, and to assessing model fit. This course will additionally provide instruction on time-based and age-based latent growth curves within the multilevel modeling framework. Prereq: SOCI 509 or requisites not met permission.

SOCI 601. Reading and Research. 1 - 9 Unit.
Individual study and/or project work.

SOCI 701. Dissertation Ph.D.. 1 - 9 Unit.
Prereq: Predoctoral research consent or advanced to Ph.D. candidacy milestone.

Teacher Licensure Program
Case Western Reserve University offers several programs leading to the Ohio teaching license. Teacher Licensure programs are offered in Art Education and Music Education at the undergraduate (Bachelor of Science) and graduate (Master of Arts) level. A unique feature of these programs is that each is offered in cooperation with a University Circle Institution—the Cleveland Institute of Art and the Cleveland Institute of Music.

In addition, several departments in the College of Arts and Sciences offer undergraduate majors leading to Ohio teaching licenses. Students wishing to pursue a teaching license in one of these areas must fulfill all the requirements for their primary major and declare teacher education as a second major, following the appropriate course sequences that lead to licensure. The teacher licensure areas are: 1) Adolescent to Young Adult (grades 7-12) in Integrated Language Arts (English major), Integrated Social Studies (history major), Integrated Mathematics (mathematics major), Life Science (biology major), or Physical Science (chemistry and/or physics major); and 2) Multi-Age (grades preK-12) in French, Spanish, or Latin.

Teacher licensure programs at Case Western Reserve University lead to teaching licenses and are approved by the Ohio Department of Education and the Ohio Board of Regents. The Teacher Education Unit at CWRU is nationally accredited by the Teacher Education Accreditation Council (TEAC), which is part of the Council for the Accreditation of Educator Preparation (CAEP). In addition, the National Association of Schools of Music (NASM) accredits the Music Education Program.

Undergraduate Programs
Ohio Teacher Education Programs
Students interested in a teaching career will pursue a primary major in the field of licensure (for which CWRU has received approval from the Ohio Board of Regents and the Ohio Department of Education) and choose teacher education as a second major. This second major requires 34 credit hours in professional education.

Adolescence to Young Adult teacher licensure (grades 7-12) is available in Integrated Language Arts (English major), Integrated Social Studies (history major), Integrated Mathematics (mathematics major), Life
Science (biology major), or Physical Science (chemistry and/or physics major). Multi-Age licensure (grades PreK-12) is available in French, Spanish, or Latin. For information concerning specific subject area requirements, go to the departmental descriptions for Biology (p. 52), Chemistry (p. 80), English (p. 137), History (p. 164), Mathematics (p. 191), Physics (p. 257), Classics (p. 92) or Modern Languages and Literatures (p. 212).

The education course requirements for the AYA or Multi-Age Language programs are as follows:

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<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDUC 255</td>
<td>Literacy Across the Content Areas</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 301</td>
<td>Introduction to Education</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 304</td>
<td>Educational Psychology</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 325</td>
<td>Content Area Special Methods I</td>
<td>2</td>
</tr>
<tr>
<td>EDUC 326</td>
<td>Content Area Special Methods II</td>
<td>2</td>
</tr>
<tr>
<td>EDUC 338</td>
<td>Seminar and Practicum in Adolescents</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 340</td>
<td>Advanced Curriculum and Methods</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 386</td>
<td>Introduction to Instructional Technology</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 390</td>
<td>Student Teaching &amp; Professional Development Seminar</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 394</td>
<td>Student Teaching Practicum</td>
<td>9</td>
</tr>
</tbody>
</table>

**Total Units**: 34

Students must maintain a 3.0 GPA in all professional education courses, a 2.7 GPA in the specific content area, and a cumulative overall GPA of 2.7 to be recommended for Ohio teacher licensure.

As noted above, Case Western Reserve University also offers teacher licensure programs in Art Education and Music Education at the undergraduate (Bachelor of Science) and graduate (Master of Arts) levels. For further information on program and course requirements for Art Education, see the Department of Art History and Art (p. 23) description in this bulletin; for Music Education, see the Department of Music (p. 231) description.

**Program Faculty**

Denise K. Davis, EdD  
(Teachers College, Columbia University)  
*Full-time Lecturer, Department of Music; Director of Teacher Education*

David Bellini, MA  
(Cleveland State University)  
*Part-time Lecturer, Teacher Education*

Educational Psychology

Jared Bendis, MA  
(Case Western Reserve University)  
*Adjunct Lecturer, Teacher Education*

Instructional Technology

Gary Ciepluch, PhD  
(University of Wisconsin-Madison)  
*Associate Professor, Department of Music*

Judy Flamik, BA  
(Lake Erie College)  
*Part-time Lecturer, Department of Art History and Art; University Supervisor*

Art Education

Matthew Garrett, PhD  
(Florida State University)  
*Associate Professor, Department of Music*

Coordinator, Undergraduate Studies in Music Education

Susan Herron, MA  
(John Carroll University)  
*Part-time Lecturer, Teacher Education*

Literacy

Kathleen Horvath, PhD  
(The Ohio State University)  
*Associate Professor, Department of Music*

David King, MFA  
(Kent State University)  
*Part-time lecturer, Department of Art History and Art; University Supervisor*

Lisa L. Koops, PhD  
(Michigan State University)  
*Associate Professor, Department of Music*

Nathan Kruse, PhD  
(Michigan State University)  
*Associate Professor, Department of Music*

Area Head of Music Education; Coordinator, Graduate Studies

Joseph Marencik, EdD  
(Northcentral University)  
*Part-time Lecturer, Teacher Education*

Content Areas Special Methods

Sandra Noble, MA  
(Michigan State University)  
*Part-time Lecturer, Department of Art History and Art; University Supervisor*

Art Education

Ryan Scherber, PhD  
(Florida State University)  
*Full-time Lecturer, Department of Music*

Tim Shuckerow, MA  
(Case Western Reserve University)  
*Director, Art Education and Art Studio*

**Courses**

**EDUC 200. Introduction to Supplemental Instruction (SI). 1 Unit.**  
This course is designed to develop and reinforce skills necessary for facilitating Supplemental Instruction through the use of pedagogical knowledge, Instructional strategies, understanding of learning theory, understanding the principles and techniques of differentiated Instruction, and understanding group dynamics. Prereq: Cumulative GPA of 3.25.

**EDUC 255. Literacy Across the Content Areas. 3 Units.**  
Literacy development is examined through various perspectives. This three hour course emphasizes understanding reading and writing as it applies to the various content areas. The course includes instruction in using protocols for oral language development, strategies for word skill development and reading comprehension, strategies for addressing dyslexia, and use of assessment of reading skills. Students apply strategies through various field experiences.
EDUC 301. Introduction to Education. 3 Units.
This course provides an introduction to the historical, sociological, and philosophical role of education in a diverse society. Historic and contemporary practices and issues are introduced and explored within the context of educational ideologies. Emphases include examination of what success in education means and beginning the process of defining one’s own identity as a teacher. Offered as EDUC 301 and EDUC 401.

EDUC 304. Educational Psychology. 3 Units.

EDUC 325. Content Area Special Methods I. 2 Units.
This methods course, designed for licensure candidates in secondary or multi-age areas, specifically emphasizes the methods inherent in teaching the subject area of licensure. The first of two courses, EDUC 325 builds on the student’s previous understanding of the methods involved in teaching their particular subject. The course will consist of weekly guided observations in a local high school classroom under the mentoring of a master teacher, various forms of exploring content and pedagogy, and monthly discussions in a special format called the “Reflective Triad” - composed of each CWRU student, his/her master teacher in the high school, and a CWRU faculty member in the content area. Additionally, the course involves introductory lesson design and teaching. Prereq: EDUC 301, EDUC 304.

EDUC 326. Content Area Special Methods II. 2 Units.
This methods course, designed for licensure candidates in secondary or multi-age areas, specifically emphasizes the methods inherent in teaching the subject area of licensure. This course is a continuation of the sequence and is the second of two courses. EDUC 326 continues students’ work in the first seminar to understand, design and teach their content. The course consists of weekly guided observations in a local high school classroom under the mentoring of a master teacher, various forms of exploring content and pedagogy, and monthly discussions in a special format called the “Reflective Triad” - composed of each CWRU student, his/her master teacher in the high school, and a CWRU faculty member in the content area. Additionally, the course involves more sophisticated lesson design in the content area, content integration, an introduction to designing instruction to meet the needs of diverse learners, and teaching. Prereq: EDUC 301, EDUC 304, EDUC 325.

EDUC 338. Seminar and Practicum in Adolescents. 3 Units.
Supervised field placement and attendance in early childhood, child, and adolescent settings including preschools, schools, hospitals, and neighborhood centers. This class is used to fulfill requirements by the Ohio Department of Education teacher licensure program. Recommended preparation: PSCL 101, EDUC 301, EDUC 304, and permission of program director. Offered as EDUC 338, PSCL 338, and SOCI 338.

EDUC 340. Advanced Curriculum and Methods. 3 Units.
This curriculum and methods course is offered for students enrolled in the high school or Multi-Age Languages teacher licensure program. It involves in-depth study of pedagogy within an integrated and interdisciplinary model. Demonstrated understanding of constructivist theory, the application of developmental and learning theories, and state and national standards in curriculum content, curriculum design, instruction and assessment are central to the course. Prereq: EDUC 301, EDUC 304, EDUC 325, EDUC 326.

EDUC 386. Introduction to Instructional Technology. 3 Units.
This course is designed to address the basic technology skills, which are required of all teachers. The course uses both concept and project based learning activities. Each of the projects is centered on a set of activities designed to allow students to demonstrate a particular subset of competencies. The course will not always provide step-by-step directions for completing projects; instead it will promote the use of existing information and help resources to allow students to develop the ability to learn new technology independently. Each of the projects will also contain the opportunity for the student to reflect on how technology impacts their teaching. Course projects are designed to assess both a basic comfort level with learning and using technology tools and the student’s ability to apply technology to improve teaching and learning. The nature of the course is a mix of technology and should engage teachers in thinking about ways to improve their teaching. Offered as EDUC 386 and EDUC 486.

EDUC 390. Student Teaching & Professional Development Seminar. 3 Units.
This course is taken in conjunction with student teaching and provides a forum for processing what students experience throughout the semester. Additionally, the course guides the professional development of each student. The course helps students integrate state and national standards in their teaching. The Teacher Performance Assessment (TPA) is addressed in this course and becomes part of the student teaching portfolio. Individual advisement is a critical component and involves resume writing, interview skills, job placement information and preparation for state mandated licensure exams. Prereq: EDUC 301, EDUC 304, EDUC 325, EDUC 326, EDUC 340. Coreq: EDUC 394 - Student Teaching Practicum - is taken in conjunction with the Student Teaching Seminar.

EDUC 394. Student Teaching Practicum. 9 Units.
This practicum represents a fifteen week student teaching experience involving curriculum design and implementation. Each student teacher plans and teaches a comprehensive unit, moving from guided practice to assuming full teacher responsibility within the school culture. Video analysis, pre- and post-teaching lesson analyses, problem-solving, and reflective dialogue are key emphases of the practicum. The Teacher Performance Assessment is a component of the student teaching.

EDUC 395. Independent Study in Education. 1 - 3 Unit.
Independent Study in Education is offered for students with special interests and/or commitments that are not fully addressed in other education courses and who wish to work independently. Offered as EDUC 395 and EDUC 495.

EDUC 401. Introduction to Education. 3 Units.
This course provides an introduction to the historical, sociological, and philosophical role of education in a diverse society. Historic and contemporary practices and issues are introduced and explored within the context of educational ideologies. Emphases include examination of what success in education means and beginning the process of defining one’s own identity as a teacher. Offered as EDUC 301 and EDUC 401.
EDUC 404. Educational Psychology. 3 Units.

EDUC 486. Introduction to Instructional Technology. 3 Units.
This course is designed to address the basic technology skills, which are required of all teachers. The course uses both concept and project based learning activities. Each of the projects is centered on a set of activities designed to allow students to demonstrate a particular subset of competencies. The course will not always provide step-by-step directions for completing projects; instead it will promote the use of existing information and help resources to allow students to develop the ability to learn new technology independently. Each of the projects will also contain the opportunity for the student to reflect on how technology impacts their teaching. Course projects are designed to assess both a basic comfort level with learning and using technology tools and the student's ability to apply technology to improve teaching and learning. The nature of the course is a mix of technology and should engage teachers in thinking about ways to improve their teaching. Offered as EDUC 386 and EDUC 486.

EDUC 495. Independent Study in Education. 1 - 3 Unit.
Independent Study in Education is offered for students with special interests and/or commitments that are not fully addressed in other education courses and who wish to work independently. Offered as EDUC 395 and EDUC 495.

Department of Theater

The Department of Theater in the College of Arts and Sciences at Case Western Reserve University offers education and participation in all aspects of drama, with course offerings in acting, stagecraft, costume design, scene design, directing, screenwriting and playwriting. Students in the Bachelor of Arts benefit from a low student to faculty ratio which ensures that they will be able to work closely with highly skilled professionals. Undergraduates have the opportunity to perform on stage as well as to serve on the design and technical crews in the four mainstage theatrical productions each year. The department treats all performances as educational experiences and welcomes the participation of all students regardless of their academic majors and career goals.

At the graduate level, the Master of Fine Arts in Acting program—a collaboration between the university and Cleveland Play House—represents a unique alliance between one of the oldest academic theater programs in the United States and the nation’s first regional theater.

The department is also partnered with London’s prestigious Royal Academy of Dramatic Art (RADA) for a unique spring semester Study Abroad opportunity for sophomores and juniors. The RADA “Time Marks” program is an exciting combination of history and performance developed specifically for undergraduate students.

Undergraduate Programs

Theater Major

The Bachelor of Arts program in theater offers concentrations in acting, design/technical theater, dramatic writing, history, and directing. Students intending to major in theater must complete 40 hours of course work. Most students will opt to take many classes beyond the requirements in order to enhance their knowledge and improve their skills. Students interested in declaring a specific concentration of study can satisfy the additional requirements listed below in order to fulfill a Bachelor of Arts with a specific concentration. Students who do not declare a concentration will receive the designation of “General Theater” on their transcript.

The basic course requirements for all theater majors are as follows:

<table>
<thead>
<tr>
<th>Performance courses: Students must take all four of the following:</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>THTR 102 Acting I for Majors</td>
<td></td>
</tr>
<tr>
<td>THTR 103 Acting II</td>
<td></td>
</tr>
<tr>
<td>THTR 110 Introduction to Theater</td>
<td></td>
</tr>
<tr>
<td>THTR 330 Play Directing I</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Design courses</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>All students must take the following course as a prerequisite, preferably in the spring of their first year:</td>
<td></td>
</tr>
<tr>
<td>THTR 111 Introduction to Design</td>
<td></td>
</tr>
<tr>
<td>Students must take one of the following:</td>
<td></td>
</tr>
<tr>
<td>THTR 223 Introduction to Scenic Design</td>
<td></td>
</tr>
<tr>
<td>THTR 224 Introduction to Lighting Design</td>
<td></td>
</tr>
<tr>
<td>THTR 225 Costume Design</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Theater history courses: Students must take all four of the following:</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>THTR 228 Development of Theater: Beginnings to English Renaissance</td>
<td></td>
</tr>
<tr>
<td>THTR 229 Development of Theater: Renaissance to Romanticism</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>THTR 327 American Theater and Playwrights</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>THTR 329 Modern and Contemporary Drama</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Students who study abroad at RADA will receive credit for</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>THTR 301, THTR 302, and THTR 304 which can satisfy the requirements for THTR 228, THTR 229, and THTR 329.</td>
<td></td>
</tr>
<tr>
<td>THTR 185 Theater Practicum (Students are required to enroll in THTR 185, a one-hour practicum credit, accumulating seven (7) credits during their eight semesters at CWRU. Students will enroll in THTR 185 each semester unless otherwise directed by the Director of Undergraduate Theater Studies. Any exemptions to this requirement (receiving two (2) credit-hours in one semester or not enrolling in THTR 185 for a semester) must receive approval from the Director of Undergraduate Theater Studies.)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Senior capstone: Students must take one of the following:</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>THTR 331 Play Directing II</td>
<td></td>
</tr>
<tr>
<td>THTR 382 Crossing Bridges: The Public Role of Artist in Understanding Disease</td>
<td></td>
</tr>
<tr>
<td>THTR 390 Theater Design and Technology Capstone</td>
<td></td>
</tr>
<tr>
<td>THTR 393 Senior Capstone: Dramaturgy</td>
<td></td>
</tr>
</tbody>
</table>

Elective Courses

Students may enroll in additional theater courses beyond the 40 credits required for the major. Some of the courses in the list below can be counted toward the major requirements or taken as electives.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>THTR 100</td>
<td>Introduction to Acting</td>
<td>3</td>
</tr>
<tr>
<td>THTR 105</td>
<td>Introduction to Stagecraft</td>
<td>3</td>
</tr>
<tr>
<td>THTR 201</td>
<td>Movement for the Actor</td>
<td>3</td>
</tr>
<tr>
<td>THTR 223</td>
<td>Introduction to Scenic Design</td>
<td>3</td>
</tr>
<tr>
<td>THTR 224</td>
<td>Introduction to Lighting Design</td>
<td>3</td>
</tr>
<tr>
<td>THTR 225</td>
<td>Costume Design</td>
<td>3</td>
</tr>
<tr>
<td>THTR 226</td>
<td>Stage Makeup</td>
<td>3</td>
</tr>
<tr>
<td>THTR 227</td>
<td>Stage Management</td>
<td>3</td>
</tr>
<tr>
<td>THTR 231</td>
<td>Acting III: Contemporary Technique</td>
<td>3</td>
</tr>
<tr>
<td>THTR 232</td>
<td>Acting IV: Classical Technique</td>
<td>3</td>
</tr>
<tr>
<td>THTR 301</td>
<td>Study Abroad at RADA: Dramatic Literature I</td>
<td>3</td>
</tr>
<tr>
<td>THTR 302</td>
<td>Study Abroad at RADA: Dramatic Literature II</td>
<td>3</td>
</tr>
<tr>
<td>THTR 303</td>
<td>Study Abroad at RADA: Acting Styles</td>
<td>3</td>
</tr>
<tr>
<td>THTR 304</td>
<td>Study Abroad at RADA: Dramatic Literature III</td>
<td>3</td>
</tr>
<tr>
<td>THTR 305</td>
<td>Study Abroad at RADA: Vocal Performance</td>
<td>3</td>
</tr>
<tr>
<td>THTR 306</td>
<td>Acting V: Camera Technique</td>
<td>3</td>
</tr>
<tr>
<td>THTR 311</td>
<td>Audition Laboratory</td>
<td>1</td>
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<tr>
<td>THTR 312</td>
<td>Playwriting</td>
<td>3</td>
</tr>
<tr>
<td>THTR 314</td>
<td>Advanced Playwriting</td>
<td>3</td>
</tr>
<tr>
<td>THTR 316</td>
<td>Screenwriting</td>
<td>3</td>
</tr>
<tr>
<td>THTR 323</td>
<td>Screenwriting</td>
<td>3</td>
</tr>
<tr>
<td>THTR 334</td>
<td>Shakespeare: Histories and Tragedies</td>
<td>3</td>
</tr>
<tr>
<td>THTR 335</td>
<td>Shakespeare: Comedies and Romances</td>
<td>3</td>
</tr>
<tr>
<td>THTR 375</td>
<td>Voice for the Stage I</td>
<td>3</td>
</tr>
<tr>
<td>THTR 376</td>
<td>Voice for the Stage II</td>
<td>3</td>
</tr>
<tr>
<td>THTR 385</td>
<td>Rehearsal and Production</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>THTR 386</td>
<td>Rehearsal and Performance</td>
<td>1</td>
</tr>
<tr>
<td>THTR 397</td>
<td>Honors Studies I</td>
<td>3</td>
</tr>
<tr>
<td>THTR 398</td>
<td>Honors Studies II</td>
<td>3</td>
</tr>
<tr>
<td>THTR 399</td>
<td>Independent Study in Theater Arts</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>THTR 231</td>
<td>Acting III: Contemporary Technique</td>
<td>3</td>
</tr>
<tr>
<td>THTR 232</td>
<td>Acting IV: Classical Technique</td>
<td>3</td>
</tr>
<tr>
<td>THTR 375</td>
<td>Voice for the Stage I</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Units**: 9

### Concentration in Design/Technical Theater

The two remaining design courses (excluding the course taken to fulfill the core requirements) from THTR 223, THTR 224, and THTR 225

Either THTR 226 or THTR 227

**Total Units**: 9

### Concentration in Dramatic Writing

THTR 312  Playwriting  3
THTR 314  Advanced Playwriting  3

**Total Units**: 9

### Concentration in Directing

THTR 331  Play Directing II  3
THTR 227  Stage Management  3

Either THTR 314 (Advanced Playwriting) or an additional design course (THTR 223, THTR 224, or THTR 225) not taken to fulfill the core requirements of the major.

**Total Units**: 9

### Departmental Honors in Theater

Majors wishing to take a Bachelor of Arts degree with honors in theater must make written application to the director of undergraduate theater studies no later than May 1 of their junior year. Students must have a minimum 3.25 overall grade point average and a minimum 3.75 grade point average in theater. Acceptance into the honors program is contingent upon faculty support and recommendation by the director of undergraduate theater studies and the department chair.

Those accepted register for THTR 397 Honors Studies I and THTR 398 Honors Studies II during their senior year, for a total of 6 hours. The honors project is defined as a production project in acting, design, playwriting, directing, or management/outreach. A supporting paper discussing the concept, execution, and performance of the project must be filed with the director of undergraduate theater studies no later than one week following the project presentation. Preparation of the project will be supervised by a department faculty member.

This project may be accepted for honors only if it receives a grade of A from both the project advisor and the Director of Undergraduate Theater Studies. The grade of A must be received both semesters. Students who qualify will receive the notation “Departmental Honors in Theater” on their diplomas. Information about the structure and specific requirements of the honors project is available from the director of undergraduate theater studies.

### Minor

A minor in theater requires 18 hours. The requirements for each concentration are as follows:

### General Theater

Required Courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>THTR 101</td>
<td>Acting I For Minors</td>
</tr>
<tr>
<td>THTR 110</td>
<td>Introduction to Theater</td>
</tr>
<tr>
<td>THTR 111</td>
<td>Introduction to Design</td>
</tr>
</tbody>
</table>

One of the following two courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>THTR 228</td>
<td>Development of Theater: Beginnings to English</td>
</tr>
<tr>
<td></td>
<td>Renaissance</td>
</tr>
<tr>
<td>THTR 229</td>
<td>Development of Theater: Renaissance to</td>
</tr>
<tr>
<td></td>
<td>Romanticism</td>
</tr>
</tbody>
</table>

Plus two additional courses above the 200-level

### Acting

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>THTR 101</td>
<td>Acting I For Minors</td>
</tr>
<tr>
<td>THTR 103</td>
<td>Acting II</td>
</tr>
<tr>
<td>THTR 201</td>
<td>Movement for the Actor</td>
</tr>
</tbody>
</table>
Theater, equivalent training and experience, or demonstrable potential for program requires an undergraduate degree with (ideally) a major in acting. The students begin their involvement with the Play House in their first semester, and their level of involvement steadily increases until, in the third year, they become professional interns at The Cleveland Play House.

In 1996, The Cleveland Play House and Case Western Reserve University joined forces to create a new Master of Fine Arts program in acting. The MFA in acting is a terminal professional degree. Candidacy for the MFA degree is contingent upon the student's academic progress and upon the assessment on the part of the faculty that the candidate possesses the potential to work in the field of theater on a professional level.

Requirements for the MFA degree include:

1. A minimum of 60 semester hours of graduate work beyond the bachelor's degree
2. A cumulative grade point average of 3.0 for all course work on the graduate level
3. Completion of the course requirements for the MFA Thesis Portfolio
4. Successful completion of the Third Year Internship at The Cleveland Play House

Course requirements for the MFA in acting are as follows:

Courses in acting, including script analysis, implementation of acting theory, characterization, modernist playwrights, and Shakespeare
Courses in movement, chosen from mask work, period styles, stage combat, and commedia
Courses in voice, chosen from voice production, articulation, and interpretation
Courses in speech, using Edith Skinner techniques, dialects, verse and lyric drama, and Shakespeare
Courses in performance theory, projects, and professional seminars

Two of the following courses in creative thesis:

- THTR 579: Graduate Stage Speech II: Articulation
- THTR 580: Graduate Stage Speech III: Dialects
- THTR 581: Graduate Stage Speech IV: Classical Texts

Two of the following courses in creative thesis:

- THTR 473: Graduate Voice Technique I
- THTR 474: Graduate Voice Technique II
- THTR 475: Graduate Voice Technique III: Classical Texts
- THTR 479: Graduate Stage Speech I: Phonetics
- THTR 501: Text Analysis for the Actor
- THTR 509: Seminar: Performance Theory
- THTR 512: Graduate Audition Lab
- THTR 530: Ensemble Technique
- THTR 531: Graduate Acting I: Performance Process
- THTR 532: Graduate Acting II: Ensemble Improvisations
- THTR 533: Graduate Acting III: The Modernists
- THTR 534: Graduate Acting IV: Shakespeare/Heightened Language
- THTR 540: Seminar: Professional Orientation
- THTR 579: Graduate Stage Speech II: Articulation
- THTR 580: Graduate Stage Speech III: Dialects
- THTR 581: Graduate Stage Speech IV: Classical Texts
- THTR 601: Special Projects
- THTR 610: Professional Internship
- THTR 630: Performance Studio

THTR 231 Acting III: Contemporary Technique 3
THTR 375 Voice for the Stage I 3

One of the following two courses:

- THTR 228 Development of Theater: Beginnings to English Renaissance 3
- THTR 229 Development of Theater: Renaissance to Romanticism 3

THTR 105 Introduction to Stagecraft 3
THTR 111 Introduction to Design 3

One of the following two courses:

- THTR 228 Development of Theater: Beginnings to English Renaissance 3
- THTR 229 Development of Theater: Renaissance to Romanticism 3

THTR 327 American Theater and Playwrights 3
THTR 329 Modern and Contemporary Drama 3

Two of the following three courses:

- THTR 223 Introduction to Scenic Design 3
- THTR 224 Introduction to Lighting Design 3
- THTR 225 Costume Design 3

THTR 101 Acting I For Minors 3
THTR 110 Introduction to Theater 3
THTR 228 Development of Theater: Beginnings to English Renaissance 3
THTR 229 Development of Theater: Renaissance to Romanticism 3
THTR 312 Playwriting 3
THTR 316 Screenwriting 3

THTR 101 Acting I For Minors 3
THTR 110 Introduction to Theater 3
THTR 111 Introduction to Design 3
THTR 329 Modern and Contemporary Drama 3
THTR 330 Play Directing I 3
THTR 331 Play Directing II 3

Graduate Programs

Master of Fine Arts in Acting

In 1996, The Cleveland Play House and Case Western Reserve University joined forces to create a new Master of Fine Arts program in acting. The students begin their involvement with the Play House in their first semester, and their level of involvement steadily increases until, in the third year, they become professional interns at the Cleveland Play House.

The MFA in acting is a terminal professional degree. Candidacy for the program requires an undergraduate degree with (ideally) a major in theater, equivalent training and experience, or demonstrable potential for work at the MFA level. In addition, candidates must provide evidence of technical skill and creative ability.

At the end of each semester in residence, the student's skill and creative ability are evaluated in light of his or her work in the department. Only students who have clearly demonstrated growth and excellence are permitted to remain in the program. The award of the MFA degree is contingent upon the student’s academic progress and upon the assessment on the part of the faculty that the candidate possesses the potential to work in the field of theater on a professional level.

Requirements for the MFA degree include:

1. A minimum of 60 semester hours of graduate work beyond the bachelor's degree
2. A cumulative grade point average of 3.0 for all course work on the graduate level
3. Completion of the course requirements for the MFA Thesis Portfolio
4. Successful completion of the Third Year Internship at The Cleveland Play House

Course requirements for the MFA in acting are as follows:

Courses in acting, including script analysis, implementation of acting theory, characterization, modernist playwrights, and Shakespeare
Courses in movement, chosen from mask work, period styles, stage combat, and commedia
Courses in voice, chosen from voice production, articulation, and interpretation
Courses in speech, using Edith Skinner techniques, dialects, verse and lyric drama, and Shakespeare
Courses in performance theory, projects, and professional seminars

Two of the following courses in creative thesis:

- THTR 473: Graduate Voice Technique I
- THTR 474: Graduate Voice Technique II
- THTR 475: Graduate Voice Technique III: Classical Texts
- THTR 479: Graduate Stage Speech I: Phonetics
- THTR 501: Text Analysis for the Actor
- THTR 509: Seminar: Performance Theory
- THTR 512: Graduate Audition Lab
- THTR 530: Ensemble Technique
- THTR 531: Graduate Acting I: Performance Process
- THTR 532: Graduate Acting II: Ensemble Improvisations
- THTR 533: Graduate Acting III: The Modernists
- THTR 534: Graduate Acting IV: Shakespeare/Heightened Language
- THTR 540: Seminar: Professional Orientation
- THTR 579: Graduate Stage Speech II: Articulation
- THTR 580: Graduate Stage Speech III: Dialects
- THTR 581: Graduate Stage Speech IV: Classical Texts
- THTR 601: Special Projects
- THTR 610: Professional Internship
- THTR 630: Performance Studio
### Department Faculty

<table>
<thead>
<tr>
<th>Name</th>
<th>Title and Affiliation</th>
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<tbody>
<tr>
<td>Jerrold Scott, MFA</td>
<td>Professor and Chair; Artistic Director of Eldred Theater; Acting; speech and dialects</td>
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<td>Jill Davis, MFA</td>
<td>Assistant Professor; Scene design; lighting design</td>
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<td>Angelina M. Herin, MFA</td>
<td>Assistant Professor; Costume design</td>
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<td>Shanna Beth McGee, MFA</td>
<td>Associate Professor; Voice</td>
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<td>Jeffrey Ullom, PhD</td>
<td>Assistant Professor; Director of Undergraduate Theater Studies; Dramatic literature; theater history</td>
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<tr>
<td>David Vegh, MFA</td>
<td>Assistant Professor; Acting; audition laboratory; film acting</td>
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<td>Ron Wilson, BGS</td>
<td>Assistant Professor; Acting; movement</td>
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<tr>
<td>Katharine Bakeless Nason</td>
<td>Katharine Bakeless Nason Professor of Theater and Drama; Director of CWRU/Cleveland Play House MFA Acting Program</td>
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<tr>
<td>Anaya Farrell, BA</td>
<td>Lecturer; Acting</td>
</tr>
</tbody>
</table>

### Adjunct Faculty

- Donald Carrier, BCom  
  (Webber Douglas Academy of Dramatic Art)  
  Adjunct Associate Professor; Associate Director, MFA Acting Program  
  Acting; script analysis

- Laura Kepley, MFA  
  (Brown University/Trinity Repertory Theatre)  
  Adjunct Associate Professor; Artistic Director, Cleveland Play House

- Kevin Moore, MA  
  (Indiana University)  
  Adjunct Associate Professor; Managing Director, Cleveland Play House

### Courses

**THTR 100. Introduction to Acting. 3 Units.**

A course designed to provide the non-major or undeclared liberal arts major experience with a basic understanding of acting and performance. Fundamentals in improvisation, vocabulary, and scene study are stressed. This course fulfills THTR 101 or THTR 102 should the undeclared student select theater as his or her major or minor. Students may receive credit for only one of THTR 100, THTR 101, or THTR 102.

**THTR 101. Acting I For Minors. 3 Units.**

This course is designed to expose the theater minor to the development of the actor's basic tools. Relaxation, concentration, and improvisation are taught along with basic scene study work. Students may receive credit for only one of THTR 100, THTR 101, or THTR 102.

**THTR 102. Acting I for Majors. 3 Units.**

This course is designed to expose the theater major to the development of the actor's basic tools. Relaxation, concentration, and improvisation are taught along with basic scene study work. Students may receive credit for only one of THTR 100, THTR 101, or THTR 102.

**THTR 103. Acting II. 3 Units.**

This course continues the work begun in THTR 101 or THTR 102 with emphasis on action, emotional life, and text analysis as the essential elements of the actor's work. Prereq: THTR 100, THTR 101, or THTR 102.

**THTR 105. Introduction to Stagecraft. 3 Units.**

An introduction to scenic construction and painting, hands-on oriented to workshop skills.
THTR 110. Introduction to Theater. 3 Units.
THTR 110 is a fundamental study of theatre from the standpoint of developing the critical acumen of a potential audience. It covers each ingredient of the theatrical experience—audience, playwriting, acting, directing, theatre architecture, design and technology—and attempts to help students define a reasonable set of standards to judge that part of the experience as an audience member and to clearly communicate their feelings and thoughts regarding that experience. The primary textbook is Edward Wilson’s The Theatre Experience, former theatre critic for The Wall Street Journal. Readings in this text are augmented by the reading of specific plays that represent different periods, genres, conventions, and dramatic styles. Representative plays (typically six each semester) include Oedipus Rex (Sophocles), Hamlet (Shakespeare), Tartuffe (Moliere), Uncle Vanya (Chekhov), Waiting for Godot (Beckett), and Angels in America (Kushner). Many of these plays are supplemented by short films prepared by Films for the Humanities so that students can see examples of various dramatic and theatrical styles in performance. In addition to class discussions, lectures, and readings, students are also required to attend two live theatre productions offered by Case Western Reserve University's Department of Theater each semester. The students write critical essays about their experience as an audience member in relation to a particular aspect of the performance. Students also have an opportunity to complete in-class projects in which they gain experience functioning as a theatre practitioner. These projects and the accompanying written assignment are designed to increase the student's understanding of the function and interdependence of various theatre artists.

THTR 111. Introduction to Design. 3 Units.
This course offers the opportunity to learn, develop, and practice the art of set, costume, and lighting design by concentrates specifically on the processes, skills, and disciplines of design for performance. Furthermore, students will read several plays and examine ways in which theater design can suggest meaning and interpretation of the script. Students will learn basic design elements and principles of composition through interactive, collaborative projects and exercises in addition to critically analyzing other designers' works from a broad spectrum of design styles. Emphasis will be placed on creativity, discovery, analysis, and collaboration.

THTR 185. Theater Practicum. 1 - 2 Unit.
This Practicum is designed to provide students with hands-on experience in a variety of positions, both on stage and behind the scenes. Students will register for one credit-hour per semester unless directed otherwise by the Director of Undergraduate Theater Studies. Each student will meet with the Director of Undergraduate Theater Studies to determine his/her position for the semester. Credit will be awarded on a P/NP basis.

THTR 201. Movement for the Actor. 3 Units.
The course focuses on developing a kinesthetic awareness of the body and its use as a theatrically expressive instrument. Exercises will encompass development of flexibility, strength building, alignment, motor skills, and concentration. Prereq: THTR 101 or THTR 102.

THTR 206. Mr. Kiss Kiss Bang Bang - James Bond and Popular Culture. 3 Units.
The twenty-one films of James Bond have become part of popular culture, and the figure of the superspy has become mythic in proportion. This series, from its first installment in 1963 to the latest reinvention of James Bond in 2006, not only depicts one dashing man's efforts to save the world from disaster again and again, but also traces the development of our popular culture. Issues of violence, sex, the presentation and treatment of women, racial stereotypes, and spectacle among other topics can be discussed after viewing each film, providing an opportunity to explore the changing expectations of American audiences and the developing form of contemporary cinema. Students who have taken USSO 286D may not receive credit for this class.

THTR 223. Introduction to Scenic Design. 3 Units.
An introduction to visual design for the stage through established theories and knowledge of the theater as a physical space. Approaches practical problems of scenic design as well as professional potential of the field.

THTR 224. Introduction to Lighting Design. 3 Units.
A “grounds up” guide to theatrical lighting for the stage. Focus made upon instrumentation, choices made in the design process, aesthetics of presentation. Combines theory with practical application.

THTR 225. Costume Design. 3 Units.
This course is designed to introduce costume design techniques, approaches, and tools. Students will learn the process of costume design through application of skill and theories - from script analysis through post-production. In addition, students will participate in a survey of costume history and drawing/rendering skills will be taught. This course will culminate in a project designed to incorporate skills and techniques acquired during the semester. Prereq: THTR 111 or instructor permission.

THTR 226. Stage Makeup. 3 Units.
An introductory hands-on course in theatrical makeup techniques and tools. Students will study the history of stage makeup, its application, and the relationship between stage makeup and developing a character. The course will explore a variety of makeup applications from basic corrective makeup to special effects including prosthetics, crepe hair, and blood effects.

THTR 227. Stage Management. 3 Units.
Designed to acquaint student with the numerous aspects of stage management.

THTR 228. Development of Theater: Beginnings to English Renaissance. 3 Units.
Theater 228/World Literature 228 explores the foundations of theater in Western civilization, beginning with Greece and then charting and analyzing the developments in playwriting, design, acting and theater architecture. Students read a wide variety of plays in order to obtain a comprehensive understanding of the history of the art form, but also learn how theater has played an integral societal function as a medium of political, economic, and cultural commentary. Development of Theater I explores developments from Aeschylus to the English Renaissance. Offered as THTR 228 and WLIT 228. Prereq: Sophomore standing.
THTR 229. Development of Theater: Renaissance to Romanticism. 3 Units.
THTR 229 explores the many developments in playwriting, design, acting, and theater architecture across the world. Students read a wide variety of plays in order to obtain a comprehensive understanding of the history of the art form, but also learn how theater has played an integral societal function as a medium of political, economic, and cultural commentary. Development of Theater II not only explores the development of theatrical conventions in Spain, England, Italy, France and other European countries that lead to the creation of modern drama, but the course also offers an in-depth look at the history and conventions of theater in India, Korea, China, and Japan. Offered as THTR 229 and WLIT 229. Counts as SAGES Departmental Seminar. Prereq: Sophomore standing.

THTR 230. Study Abroad at RADA: Drama Literature I. 3 Units.
This is a study-abroad course at the Royal Academy of Dramatic Arts in London. Theater 301 explores the foundations of theater in Western civilization, with a special emphasis on Greek theatre in performance. Acceptance into the RADA Study Abroad Program required. Students cannot receive credit for both THTR 228L and THTR 301.

THTR 231. Acting III: Contemporary Technique. 3 Units.
An advanced exploration of contemporary acting technique emphasizing the effective use of poetic language, heightened partner awareness and behavioral response to achieve greater specificity and spontaneity in performance. Scene work will focus on American master playwrights of the 20th century such as Williams, Miller and Oedets. Counts as SAGES Departmental Seminar. Prereq: THTR 102.

THTR 302. Study Abroad at RADA: Drama Literature II. 3 Units.
This is a study-abroad course at the Royal Academy of Dramatic Arts in London. THTR 302 explores the many developments in playwriting, design, acting, and theater architecture in the French Neoclassic period. Acceptance into the RADA Study Abroad Program required. Student cannot receive credit for both THTR 229L and THTR 302.

THTR 303. Study Abroad at RADA: Acting Styles. 3 Units.
This is a study-abroad course at the Royal Academy of Dramatic Arts in London. THTR 303 is an exploration of techniques to approach classical theater, with emphasis on the works on Restoration theatre performance. Acceptance into the RADA Study Abroad Program required. Student cannot receive credit for both THTR 228L and THTR 303.

THTR 304. Study Abroad at RADA: Drama Literature III. 3 Units.
Course credit earned while studying abroad at the Royal Academy of Dramatic Arts in London. THTR 304 explores the work of Bertolt Brecht, with special emphasis on his play in performance. The course emphasizes the relationship between different theatrical representations and their historical and social context. Acceptance into the RADA Study Abroad Program required. Students cannot receive credit for both THTR 329L and THTR 304.

THTR 305. Study Abroad at RADA: Vocal Performance. 3 Units.
This is a study-abroad course at the Royal Academy of Dramatic Arts in London. THTR 305 focuses upon the training of the voice for heightened language. Acceptance into the RADA Study Abroad Program required. Students cannot receive credit for THTR 305 and either THTR 375L or THTR 376L.

THTR 306. Acting V: Camera Technique. 3 Units.
Acting for the Camera class with emphasis on how it differs from onstage work. Interviews, scenes, and exercises will be used to highlight the differences and similarities. Emphasis on contemporary works. Prereq: THTR 231 or THTR 232.

THTR 311. Audition Laboratory. 1 Unit.
A discussion and practicum exploring the problems faced by an actor in various audition situations. Development of an audition repertory for the actor for stage, video and film. Prereq: Senior Theater major.

THTR 312. Playwriting. 3 Units.
Theory and practice of dramatic writing, in the context of examples, classic and contemporary. Recommended preparation: ENGL 203 or ENGL 213 or ENGL 214 or ENGL 303 or ENGL 304. Offered as ENGL 305 and THTR 312.

THTR 314. Advanced Playwriting. 3 Units.
Theory and practice of dramatic writing with special focus on the craft of writing a full-length play. Offered as ENGL 314 and THTR 314. Prereq: ENGL 305 or THTR 312.

THTR 316. Screenwriting. 3 Units.
A critical exploration of the craft of writing for film, in which reading and practicum assignments will culminate in the student submitting an original full-length screenplay. Offered as ENGL 316 and THTR 316. Prereq: THTR 312.

THTR 323. Topics in Design. 3 Units.
This course will examine various topics relating to theatre design and technology not covered in other design courses. Students will be provided with practical and theoretical knowledge on a specific topic in order to increase their design and/or technical skills. In addition, each course offering will have its own stated objectives. This course may be repeated by students with each new topic. Prereq: THTR 111 or instructor permission.

THTR 327. American Theater and Playwrights. 3 Units.
Designed to provide students an overview of the development of theater in the United States and to familiarize them with the work and themes of selected American playwrights. Offered as AMST 327 and THTR 327.

THTR 329. Modern and Contemporary Drama. 3 Units.
Theatre 329 explores the development of western drama and theatre from 1860 through present-day productions. The course emphasizes the relationship between different theatrical representations and their historical and social context. Shakespeare’s well-known dictum that “theatre holds a mirror up to nature” is expanded when one examines who is holding that mirror, and how their actions participate in the constantly shifting construction of culture. Given this premise, the course investigates the development of specific European cultures (England, France, Germany, and Italy) as well as other regions (the United States, South America, and Russia) through the - live and literary - representations they make of themselves. Offered as THTR 329 and WLIT 329. Prereq: Sophomore standing.

THTR 330. Play Directing I. 3 Units.
This course will begin a two-semester study of the art and craft of stage direction of plays. Topics covered will include history of the profession, directorial theory and practice, development of skills such as text analysis, design and concept, and general problem solving. Prereq: THTR 101 and THTR 102, and upperclass status.
THTR 331. Play Directing II. 3 Units.
This course will continue with the basic concepts learned in THTR 330 and will expand them in regard to actual production. Topics will include directing mechanics, ground planning, blocking, and visualization, staging and working with actors. The course will culminate in a faculty supervised directing project for public performance. There are three evening labs for this course. Counts as SAGES Senior Capstone. Prereq: THTR 330, and upperclass status.

THTR 334. Shakespeare: Histories and Tragedies. 3 Units.
Close reading of a selection of Shakespeare's tragedies and history plays (e.g., "Richard the Third," "Julius Caesar," "Hamlet," "King Lear"). Topics of discussion may include Renaissance drama as a social institution, the nature of tragedy, national history, gender roles, sexual politics, the state and its opponents, theatrical conventions. Assessment may include opportunities for performance. Offered as ENGL 324, ENGL 424, and THTR 334. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCS, FSNA, FSSO, FSSY, FSTS, or FSCS.

THTR 335. Shakespeare: Comedies and Romances. 3 Units.
Close reading of selected plays of Shakespeare in the genres of comedy and romance (e.g., "The Merchant of Venice," "Twelfth Night," "Measure for Measure," "The Tempest"). Topics of discussion may include issues of sexual desire, gender roles, marriage, the family, genre conventions. Assessment may include opportunities for performance. A student may not receive credit for both ENGL 325 and ENGL 325C. Offered as ENGL 325, ENGL 425, and THTR 335. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCS, FSNA, FSSO, FSSY, FSTS, or FSCS.

THTR 375. Voice for the Stage I. 3 Units.
Development of the actor's vocal instrument. Work in articulation, range, and flexibility. Prereq: Theater major or consent of department.

THTR 376. Voice for the Stage II. 3 Units.
Continuation of THTR 375. Prereq: THTR 375.

THTR 382. Crossing Bridges: The Public Role of Artist in Understanding Disease. 3 Units.
An in-depth look at the role of the artist in public life and in creating theatrical performance from life experience. The students interact with patients in medical treatment for catastrophic illness and as they understand the experience of disease, they help transform that experience into a performance that gives a voice to the unvoiced in our society. The approved service learning course is offered only as a Senior Capstone and is a demanding challenge for the serious student of theater. Prereq: Acting concentration or consent of department. Counts as SAGES Senior Capstone.

THTR 385. Rehearsal and Production. 1 - 3 Unit.
Practicum for students participating in production work in the Department of Theater and Dance. Supervised laboratory experience in technical theater, construction techniques, scenery, costumes, lighting, and props; production; ticket office operations, promotion, publicity and public relations; house management; wardrobe responsibilities; stage management; assistant directing; and other production positions relating to the mainstage performances in Eldred Theater. Students are recommended to take one credit hour per production, with a maximum of 8 credit hours allowed during their undergraduate career.

THTR 386. Rehearsal and Performance. 1 Unit.
Practicum for students participating in performance in the Department of Theater and Dance, relating to the mainstage productions at Eldred Theater. This course may be repeated, for a maximum total of 2 credits.

THTR 390. Theater Design and Technology Capstone. 3 Units.
This is a SAGES Capstone course designed to provide an opportunity for advanced Design/Technical Theater Undergraduates to undergo a thorough theatrical design experience as would expected in the professional theater. The project requires a specific play or performance piece to be chosen or assigned and researched thoroughly. The research would culminate in a production concept which should be presented in written and oral form with a great deal of visual support. The production concept leads to the design, either scenic, costume, lighting or sound, which then must be executed. In professional theater, execution first means preparing all of the drafting, renderings, and paperwork necessary for a production team to create the set or costumes, or prepare the necessary lighting or sounds equipment in the venue. The final portion of the design execution will be the performance of the actual piece on stage. It could be appropriate for a scenic or costume design project to be complete at this stage as the vast majority of the work must be done before the actual performance and the realization of the design is executed by a production team. Lighting and sounds designers must finish the execution of their designs in the technical rehearsal phase of production. Their work is dependent on integration with the other elements of production. However, theater is a collaborative art form, and the final execution of every design on stage is the ultimate goal of the designers, and when possible, it would be preferable to have every capstone project culminate in a fully realized production. Due to budget constraints and the logistics of allowing every design/technical senior to be able to participate in a fully realized production, students can choose to pursue a more research intensive project in which the student could study specific designers, movements in design or the development of technology in theatrical design. These projects would be presented in a more traditional oral presentation with visual support. Counts as SAGES Senior Capstone.

THTR 393. Senior Capstone: Dramaturgy. 3 Units.
This course introduces students to theories of textual analysis and contextual research within the framework of theatrical performance. Students will investigate the history and methodologies of dramaturgy, and then apply the best practices of the profession to the study and production of contemporary plays. Because dramaturgy is a collaborative endeavor, students will participate with others in the production of a theoretical adaptation from a non-dramatic source, as well as the creation of an interdisciplinary theatre event and a multi-media performance project. By course end, students will be able to support their theatrical interests with dramaturgical insights and to work collaboratively to create productions that reflect the cultural and aesthetic diversity of the 21st century. Counts as SAGES Senior Capstone. Prereq: Senior standing.
THTR 396. Non-Verbal Theatrical Text. 3 Units.
This is a SAGES capstone course. It has been constructed to provide an opportunity for advanced Design/Technical Theater Undergraduates to examine and explore the roots and current trends of post-modern, contemporary theater as well as to investigate current design outside of its traditional decorative role. Rather, as in current movements described as “action design” or “affective space theory”, design will be used to create a text which combines with the spoken word in production for the purpose of audience perception of meaning. As a starting point, this course will examine the advent of realism on stage and follow this study by subsequent significant movements departing from realism. Through extensive use of video and live presentation, students will select movements in theater production for written and oral analysis. As a class, we will define post-modern as a term to describe contemporary theater and further explore the possibilities of theatrical presentation form a written dramatic source. This course will culminate in the production, whether group or individualized, of a creative design, based on a work written for the stage, but exploring non-verbal communication of an author's or director's intent. This exploration of theater language might combine non-verbal characteristics inclusive of images, relationships, activity, song, music, properties, objects, color, costume, movement, light, silence, sounds, presence or gesture. Goals of the seminar will be to find a process for textual analysis through an in-depth examination of the chosen text, to create a focus upon the action which drives this text, to discover a process for imagery that will give the text dimension and finally, to embody and realize ideas which impart to that text its intellectual content. A public presentation within Eldred's black box, Mather's dance studio space, or a public performing space within the CWRU campus will be integral to this process. Weekly discussion, analysis and critique will be a critical element of the course, as well as expository writing. Weekly participatory assignments will also be prescribed from a mandatory and suggested reading list. Counts as SAGES Senior Capstone. Prereq: Theater Majors with Design Tech Emphasis.

THTR 397. Honors Studies I. 3 Units.
Individual projects in acting, dance, and directing.

THTR 398. Honors Studies II. 3 Units.
Individual projects in acting, design, playwriting, and directing.

THTR 399. Independent Study in Theater Arts. 1 - 3 Unit.
Independent research and project work in areas of acting, design, voice, theater history, playwriting, directing, or theater management.

THTR 401. Graduate Movement I: Corporeal Mime. 3 Units.
This beginning class focuses on developing flexibility, alignment, strength, concentration and basic motor skills, greater physical spatial awareness, and serves as a base for the remaining three semesters. Yoga and Tai Chi exercises are used to develop physical flexibility and the connection to breath. Elements of Decroux-based Corporeal Mime technique strengthen the student's physical instrument as well as alignment and energy. Hand-to-hand combat begins. Prereq: Must be a student in MFA Acting program.

THTR 402. Graduate Movement II: Neutral Mask. 3 Units.
The course focuses on simplifying and empowering the physical actor by continuing to connect breath to action, to discover relaxation within the given task, and beginning work in characterization. Strength, flow, energy, imagery, and the shedding of intrusive mannerisms will be gained from a study of LeCoq based Neutral Mask exercises. Following the Neutral Mask work, students will progress to character work through the use of Physical Acting techniques. Stage combat work continues. Prereq: THTR 401.

THTR 403. Graduate Movement III: Expressive Masks. 3 Units.
The class focuses on the continuation of expanding the actor's physical and imaginative range that will enable she/he to support larger and bolder physical choices in characterization. Building upon the Neutral Mask work from the previous semester, the student will experience, through LeCoq based techniques, Basel and Expressive Masks and improvisation. Stage combat work continues. Prereq: THTR 402.

THTR 404. Graduate Movement IV: Commedia. 3 Units.
The class continues to expand the actor's physical and imaginative range with the challenges of the Commedia dell Arte. Students will explore the primary masks of the Commedia and ultimately be assigned a particular mask. The Commedia work will culminate in the masked performance of a Commedia Scenario. Following the scenario presentation, the students will finish the movement training by developing their personal clown. Prereq: THTR 403.

THTR 473. Graduate Voice Technique I. 3 Units.
Assessment of students' current vocal and alignment skills. Laboratory for exploring new vocal and alignment habits supportive of healthy vocal functioning. Exploration of the body and voice as it relates to breath, resonance, and the healthy exhalation of sound. Prereq: Must be candidate in M.F.A. Acting program.

THTR 474. Graduate Voice Technique II. 3 Units.
Continued laboratory for the exploration of alignment and vocal skills supportive of healthy vocal functioning. Continued exploration of the body and voice as it relates to breath, articulation, resonance, and the healthy exhalation of sound. Emphasis on the physical and energetic skills needed to produce full-bodied, healthy sound capable of being heard and understood while acting in theatrical productions. Required of M.F.A. candidates in the Acting program. Prereq: THTR 473.

THTR 475. Graduate Voice Technique III: Classical Texts. 3 Units.
Development of skills needed to address the specific needs of Shakespeare and Classical texts in performance, including vocal skills, the use of breath, imagery, and textual studies. Prereq: THTR 474.

THTR 479. Graduate Stage Speech I: Phonetics. 2 Units.
Designed to evaluate the graduate student actors' current speech skills, to teach them a stage appropriate dialect using the Skinner narrow IPA set, and to achieve a level of mastery over articulation and diction. Prereq: Must be a student in MFA Acting program.

THTR 501. Text Analysis for the Actor. 2 Units.
An introduction to the craft of reading a theatrical text from an actor's point of view. Methods for analyzing the action and dialogue of a play will be applied to dramatic text so that the actor can learn to transform a one-dimensional text into a three-dimensional performance. Prereq: Must be a student in MFA Acting program.

THTR 509. Seminar: Performance Theory. 2 Units.
Research seminar designed to acquaint the student with selected major Western theoretical writings of performance theory and the art of the actor. Readings also include material on the creative acting process and the impact of societal and cultural influences on performance and the theatrical impulse. Prereq: Must be a student in MFA Acting program.

THTR 512. Graduate Audition Lab. 1 - 2 Unit.
This class focuses on choosing and developing classical and contemporary monologues for audition purposes. Other elements of the audition process are explored including the preparation of sides for a specific role as well as casting simulations with guest directors and instructors. Prereq: Must be a student in MFA Acting program.
THTR 530. Ensemble Technique. 1 - 2 Unit.
A practicum course structured to explore the use of ensemble dynamic
techniques in a rehearsal/performance environment, as well as to
develop a set of exercises which encourage and sustain the actor’s
channels of interpersonal communication during a range of rehearsal
and performance situations. Prereq: Must be a student in MFA Acting
program.

THTR 531. Graduate Acting I: Performance Process. 3 Units.
This course is aimed toward developing a practical and cohesive
acting approach. Through improvisations and structured exercises,
the actor learns to employ the basic concepts of the Stanislavski
System of intention, action and given circumstances in order to make
acting decisions that are viable, playable, original, truthful and specific.
Ensemble building and scene work also play heavily in this foundation
course. Prereq: Must be a student in MFA Acting program.

THTR 532. Graduate Acting II: Ensemble Improvisations. 3 Units.
Scene work will constitute the core of Acting II. Group improvisations
and collective creations will be interspersed throughout the term. Fully
embracing the idea of ensemble, this class will focus on exploration,
where process and discovery are the primary objectives. Prereq: THTR 531.

THTR 533. Graduate Acting III: The Modernists. 3 Units.
The class focuses on the Modernists: Chekhov, Ibsen. The student will
apply the Stanislavski System of character work and the specific tools of
"Physical Acting" techniques to these playwrights through intensive scene
work. The focus is also on imagery in language and clarity of subtext and
imagery as it relates to the dramatic text and character intention. Prereq: THTR 532.

THTR 534. Graduate Acting IV: Shakespeare/Heightened Language.
3 Units.
This course explores the genre of theater loosely called "Heightened
Language" and the challenges it presents for the actor. Students will
complete intensive scene work on texts ranging from the Greeks,
to Shakespeare, to the 19th Century Victorians, and discover the
interconnectedness of the styles, and the demands they place on the
actor’s craft. Prereq: THTR 533.

THTR 540. Seminar: Professional Orientation. 2 Units.
This class is structured to help the third year MFA actor prepare for
his/her entrance and transition to the professional arena. Students will
be introduced to the world of contracts, taxes, agents and unions, and
understand how to survive and thrive while pursuing a professional acting
career. Guest speakers and facilitators will present material to familiarize
students with the realities of a life in the arts. Prereq: Must be a student in
MFA Acting program.

THTR 579. Graduate Stage Speech II: Articulation. 3 Units.
This course will continue the work begun in THTR 479, exploring more
of the International Phonetic Alphabet and developing applicable skills in
articulatory sophistication. Prereq: THTR 479.

THTR 580. Graduate Stage Speech III: Dialects. 2 Units.
This survey course will examine the use and application of major stage
dialects in the American theatre using a phonetic tool set as a basis for
understanding sound substitutions. The student will also study the ways
in which rhythmic changes and resonance and tension shifts affect the
dialects. Prereq: THTR 579.

THTR 581. Graduate Stage Speech IV: Classical Texts. 2 Units.
The objective of this course is to increase and enhance the students’
ability to handle the heightened language and technical demands of
classical texts. The class will use poetry, first person narratives from
classic novels and verse drama to accomplish this task. The class will
contain a strong "verbal gym" component meant to strengthen and refine
diction and standard American speech. Drills, tongue twisters, reading
aloud will be part of every class. Prereq: THTR 580.

THTR 601. Special Projects. 1 - 3 Unit.
(Credit as arranged.)

THTR 610. Professional Internship. 1 - 4 Unit.
In the third year, the student will begin their Professional Internship with
Cleveland Play House. Involvement will include: understudy assignments
and an AEA contracted role in a production(s) as assigned by Cleveland
Play House. Prereq: THTR 534.

THTR 630. Performance Studio. 3 Units.
A performance laboratory, ensemble-based practicum in which the
student works to integrate effectively a wide range of performance skills
culminating in a studio production. May be taken two times in the last two
semesters of graduate study. Prereq: THTR 534.

THTR 642. Thesis Portfolio I. 1 Unit.
Course designed specifically for candidates in the Master of Fine Arts
program in Acting. Graduate students enroll for the course during the
fall semester of their third year of study. Work on the thesis spans three
years of study based on roles the MFA actor has created. A rough draft of
the thesis portfolio will be completed, according to requirements set forth
in the department's MFA Handbook, and presented at the end of the fall
semester of the third year to the faculty. Satisfactory completion of the
portfolio is part of the requirements for awarding the Master of Fine Arts
degree. Prereq: Must be a student in MFA Acting program.

THTR 643. Thesis Portfolio II. 1 Unit.
Course designed specifically for candidates in the Master of Fine Arts
program in Acting. Graduate students enroll for the course during their
third year of study, although work spans three years of study, based on
roles the M.F.A. actor has created. A portfolio is prepared, according
to requirements set forth in the department's M.F.A. Handbook, and is
presented to the faculty during the spring semester of the third year, in a
formal oral defense. Satisfactory completion of the portfolio and its oral
defense are among the requirements for awarding the Master of Fine Arts
degree. Course limited to M.F.A. candidates in the Acting program.

THTR 644. M.A. Project. 1 - 12 Unit.
Research and development of a Master of Arts project in Theater.

Washington Study Program

The Washington Study Program provides students with the opportunity
to complete a full-time, research-intensive internship in Washington,
D.C. By participating in a semester-length program during the fall or
spring (WASH 2A Washington Center Internship), students earn 9 credit
hours; for a summer internship (WASH 2D Washington Center Summer
Internship), they earn 3 credit hours. In addition, students earn 3 credit
hours by developing a portfolio based on their internship experiences
(WASH 2C Washington Center - Portfolio). The credits earned can be
counted as general electives or applied to a student’s major or minor,
with the prior consent of the individual department(s). Finally, as part of
the Washington Study Program, students participate in a seminar and
attend a weekly lecture/discussion group (WASH 2B Washington Center -
Politics and Public Policy Course).

Washington Study Program
To be eligible for the program, a student is expected to be a junior or senior and have at least a 3.0 GPA. The program director, the student’s major advisor, and the appropriate dean must approve each application. Students must ensure that their participation will not prevent them from meeting on-campus residency or other university requirements.

Women’s and Gender Studies Program

The goal of the Women’s and Gender Studies Program is to educate students in interdisciplinary approaches to feminist theories of women, gender, culture, and society. Students are exposed to a variety of forms of critical thinking in relation to:

1. the social construction of knowledge and philosophy
2. approaches to science and medicine informed by “feminist empiricism” and “feminist standpoint” theories
3. historicized and cross-cultural accounts of gender and gender inequality
4. literary criticism
5. contemporary theories of art, performance, language, jurisprudence, social science, and religion in the context of women’s experience
6. studies of the body as a focal point for theorizing relations among the arts and sciences

Women’s and Gender Studies is an interdisciplinary program that prepares students to think critically and creatively within a framework employing gender as a central category of analysis. The program is set up to test and challenge the technologies and limitations of gender roles in a multitude of cultural and historical settings. It is designed to familiarize students with the analytical and hermeneutic tools of research and interpretation, and to create awareness of the ethical, political, and aesthetic dimensions of gender in history and culture.

Undergraduate Program

Major

The Women’s and Gender Studies Program offers a major leading to the Bachelor of Arts degree. The program offers a sound course of study with a disciplinary concentration grounding the program’s interdisciplinary objectives. Up to six credit hours in required or elective courses for another major may also be applied to the Women’s and Gender Studies major.

In the two required courses, students become fluent in current tools of research and interpretation employed in women’s and gender studies.

Required Course I:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>WGST 201/HSTY 270</td>
<td>Introduction to Gender Studies</td>
<td>3</td>
</tr>
<tr>
<td>ENGL/PHIL/RLGN 270</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Required Course 2: One of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>WGST 301</td>
<td>Women, Creativity and the Arts</td>
</tr>
<tr>
<td>WGST 318</td>
<td>History of Black Women in the U.S.</td>
</tr>
<tr>
<td>WGST 326</td>
<td>Gender, Inequality, and Globalization</td>
</tr>
<tr>
<td>WGST 353</td>
<td>Women in American History I</td>
</tr>
<tr>
<td>WGST 365</td>
<td>Gender and Sex Differences: Cross-cultural Perspective</td>
</tr>
</tbody>
</table>

Elective courses: WGST majors must distribute their courses among the Arts, Humanities, and Social Sciences. They must take at least one course in each of these three areas. In two of the areas, they must take two courses. Consult one of the program’s academic representatives with questions about the curriculum. Majors and minors in WGST may also conduct an Independent Study (WGST 399) and/or a SAGES Capstone (WGST 396) with program faculty.

Total Units: 27

Minor

Fulfillment of the minor requires completion of 18 credit hours according to the following course distribution:

Required Courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>WGST 201</td>
<td>Introduction to Gender Studies</td>
<td>3</td>
</tr>
<tr>
<td>Five approved electives</td>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

Total Units: 18

To help ensure a comprehensive course of study in a particular area of interest, each student’s combination of courses and the structure of an independent study must be approved by one of the program’s academic representatives.

Program Faculty

Cheryl Toman, PhD
Associate Professor, Department of Modern Languages and Literatures; Director and Academic Representative, Women’s and Gender Studies Program

Athena Vrettos, PhD
Associate Professor, Department of English; Academic Representative, Women’s and Gender Studies Program

Karen Beckwith, PhD
Flora Stone Mather Professor, Department of Political Science

Joy Bostic, PhD
Associate Professor, Department of Religious Studies

Susan S. Case, PhD
Associate Professor, Department of Organizational Behavior, Weatherhead School of Management

Margaretmary Daley, PhD
Associate Professor, Department of Modern Languages and Literatures

Ananya Dasgupta, PhD
Assistant Professor, Department of History

T. Kenny Fountain, PhD
Associate Professor, Department of English

Elina Gertsman, PhD
Associate Professor, Department of Art History and Art

Laura E. Hengehold, PhD
Associate Professor, Department of Philosophy

Susan W. Hinze, PhD
Associate Professor, Department of Sociology
WGST 228. Sociology of Sexuality. 3 Units.
This course analyzes the issues of sex and sexuality from a sociological point of view. It is centered on the notion that what we consider to be 'normal' or 'natural' about sex and sexuality is, in reality, socially constructed. One’s viewpoint on the issues surrounding sexuality are influenced by the social context in which they live, as opposed to the purely biological viewpoint that presupposes some sense of normacy or naturalness regarding sexual relations. A range of topics will be covered, including readings that discuss the variations of sexuality and the notions of sexual “deviance” in order to explore the cultural and societal variation that exists along the lines of gender, race, ethnicity, sexual orientation, age and disability. Offered as SOCI 228 and WGST 228.

WGST 227. Gender in U.S. Society. 3 Units.
The focus of this course is on unique and convergent experiences of men and women in U.S. society. Different social expectations and opportunities encountered by men and women in the context of marriage and the family, work settings, and in informal organizations will be addressed. Legislation and social policy dealing with gender issues will be considered. Offered as SOCI 222 and WGST 222.
WGST 304. Representations of Black Women and Religion in Film. 3 Units.
In this course we will explore cinematic representations of black women and religion in film. Each week we will view a film in class. We will begin the class with the film *Imitation of Life* and then the course with *The Help*. Throughout the course we will analyze the ways in which notations of gender, sexuality, intimate violence, and modern notions of race and color, have informed representations of black women and religion in film. In addition, we will discuss how these representations, in turn, have influenced cultural ideas about black women in the Americas. Offered as RLGN 304, RLGN 404, WGST 304, and ETHS 304.

WGST 312. Women in the Ancient World. 3 Units.
The course offers a chronological survey of women's lives in Greece, Hellenistic Egypt, and Rome. It focuses on primary sources as well as scholarly interpretations of the ancient record with a view to defining the construction of gender and sexuality according to the Greco-Roman model. Additionally, the course aims to demonstrate how various methodological approaches have yielded significant insights into our own perception of sex and gender. Specific topics include matriarchy and patriarchy; the antagonism between male and female in myth; the legal, social, economic, and political status of women; the ancient family; women's role in religion and cult; ancient theories of medicine regarding women; pederasty and homosexuality. Offered as CLSC 312 and WGST 312.

WGST 315A. International Bioethics Policy and Practice: Women's Health in the Netherlands. 3 Units.
This 3-credit course allows students to familiarize themselves with social policies and practices related to women's health in the United States and the Netherlands. Issues covered in the course include birth control and family planning, abortion, prenatal testing, childbirth, health care disparities, cosmetic surgery, prostitution and trafficking in women. This course also addresses the US and Dutch national policies regarding the public provision of health care for women. The course places an emphasis on the ways in which social norms shape policies over time, which political actors are involved in shaping women's health policy, and the balance between women's health as a matter of the public good or individual responsibility. This course substantively explores gender-specific cultural values and practices in relation to women's health in the United States and the Netherlands and will help students develop the analytical skills necessary for evaluating social policy and ethical issues related to women's health. Offered as BETH 315A and BETH 415A.

WGST 318. History of Black Women in the U.S.. 3 Units.
Chronologically arranged around specific issues in black women's history organizations, participation in community and political movements, labor experiences, and expressive culture. The course will use a variety of materials, including autobiography, literature, music, and film. Offered as ETHS 318, HSTY 318, and WGST 318.

WGST 325. Philosophy of Feminism. 3 Units.
Dimensions of gender difference. Definition of feminism. Critical examination of feminist critiques of culture, including especially politics, ideology, epistemology, ethics, and psychology. Readings from traditional and contemporary sources. Offered as PHIL 325, PHIL 425 and WGST 325.

WGST 326. Gender, Inequality, and Globalization. 3 Units.
Using a sociological perspective, this course examines how major societal institutions, including the economy, polity, medicine, religion, education and family, are structured to reproduce gendered inequalities across the globe. Attention is given to the intersections of race/ethnicity, social class, gender and sexuality in social systems of power and privilege. Of critical importance is how gender figures in the relationship between Economic North and Economic South countries. We will elucidate how gender norms vary by culture and exert profound influence on the daily, lived experiences of women and men. The course will be informed by recent scholarship on feminism, women's movements, and globalization. Offered as SOCI 326 and WGST 326. Prereq: SOCI 101 or permission of program director.

WGST 335. Women in Developing Countries. 3 Units.
This course will feature case studies, theory, and literature of current issues concerning women in developing countries primarily of the French-speaking world. Discussion and research topics include matriarchal traditions and FGM in Africa, the Tunisian feminist movement, women, Islam, and tradition in the Middle East, women-centered power structures in India (Kerala, Pondichery), and poverty and women in Vietnam, Laos, and Cambodia. Guest speakers and special projects are important elements of the course. Seminar-style format, taught in English, with significant disciplinary writing in English for WGST, ETHS, and some WLIT students, and writing in French for FRCH and WLIT students. Writing assignments include two shorter essays and a substantial research paper. Offered as ETHS 335, FRCH 335, WLIT 335, WGST 335, FRCH 435 and WLIT 435. Counts as SAGES Departmental Seminar.

WGST 337. Women in the Arab World. 3 Units.
The purpose of this course is twofold: It is a course that allows students an in-depth look at the diverse women who represent a number of cultures in the Arab world in nations from the Mashrek to the Maghreb. The second primary goal of the course is to study such women through the eyes of leading Arab women theorists who have made an impact not only in their own countries, but also on disciplines intersecting with women's studies worldwide. We will study the Arab woman's place in her respective society, in political and economic systems, in education, and in the family. We will also analyze her contributions to art and literature as well as to the sciences. The course will provide an overview of the Arab woman throughout history, from her origins to her place within recent movements within the Arab Spring and other current world events. As Arab women are Muslim, Christian, and Jewish, views of women within these major world religions will also be taken into account as we study the Arab woman as well as religion's impact on culture in the Middle East and in the Maghreb in particular. In the course, we will utilize theoretical texts, but also case studies as well as examples from media and the arts. During the semester, we will take advantage of teleconferencing opportunities between CWRU and two major academic units for Women's Studies in the Arab world: The Institute for Women's Studies in the Arab World (IWSAW) in Beirut, Lebanon, and the University of Jordan's Center for Women's Studies in Amman. Offered as FRCH 337, FRCH 437, ARAB 337, ETHS 337 and WGST 337.
WGST 339. Black Women and Religion. 3 Units.
This course is an exploration of the multidimensional religious experiences of black women in the United States. These experiences will be examined within particular historical periods and across diverse social and cultural contexts. Course topics and themes include black women and slave religion, spirituality and folk beliefs, religion and feminist/womanist discourse, perspectives on institutional roles, religion and activism, and spirituality and the arts. Offered as: ETHS 339 and RLGN 338 and WGST 339.

WGST 342. Latin American Feminist Voices. 3 Units.
Examination of the awakening of feminine and feminist consciousness in the literary production of Latin American women writers, particularly from the 1920s to the present. Close attention paid to the dominant themes of love and dependency; imagination as evasion; alienation and rebellion; sexuality and power; the search for identity and the self-preservation of subjectivity. Readings include prose, poetry, and dramatic texts of female Latin American writers contributing to the emerging of feminist ideologies and the mapping of feminist identities. Offered as SPAN 342, SPAN 442, ETHS 342, WGST 342, WLIT 342, and WLIT 442.

WGST 343. Language and Gender. 3 Units.
This course introduces students to the study of language and gender by exploring historical and theoretical trends, methods, and research findings on the ways gender, sexuality, language, and discourse interact with and even shape each other. Topics may include “grammatical” versus “biological” gender, feminine écriture, the women and language debate, speech acts and queer performativity, nonsexist language policy, discourses of gender and sexuality, feminist stylistics, and LGBT sociolinguistics. Offered as: ENGL 343, ENGL 443, and WGST 343. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

WGST 345. Topics in LGBT Studies. 3 Units.
This course will focus on selected topics in the study of LGBT literature, film, theory, and culture. Individual courses may focus on such topics as queer theory, LGBT literature, queer cinema, gay and lesbian poetry, LGBT graphic novels, the AIDS memoir, AIDS/Gay Drama, and queer rhetoric and protest. Maximum 6 credits. Offered as ENGL 345, ENGL 445 and WGST 345. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

WGST 346. Women and Politics. 3 Units.
Women and Politics involves a critical examination of the impact of gender on the forms and distributions of power and politics, with primary reference to the experience of women in the United States. Major concerns of the course include what we mean by “sex,” “gender,” and “politics”; the relationship between women and the state; how women organize collectively to influence state policies; and how the state facilitates and constrains women’s access to and exercise of political power. The course is organized around four foci central to the study of women and politics. The first section of the course focuses on what we mean by “women,” “gender,” and “politics.” In this section, we will consider how these concepts intersect and the ways in which each may be used to deepen our understanding of the workings of governments and political systems, and of women’s relative political powerlessness. The second section of the course employs these concepts to understand the (re) emergence of the US feminist movement, its meanings, practices, and goals, and its transformation across US political history. In the third section, we turn to conventional electoral politics, focusing on women’s candidacies, their campaigns, and women’s voting behavior. In the final section of the course, we consider those general factors that might provide for increased gender equality and improved life status for women, in global, comparative perspective. Offered as POSC 346 and POSC 446 and WGST 346. Counts as SAGES Departmental Seminar.

WGST 349. The Arab World Experience. 3 Units.
Taught and led by Case faculty, The Arab World Experience is a spring semester course with a spring break study abroad component in a Middle Eastern or North African country supplemented by course meetings before and after travel. It will rotate among countries such as Jordan, Lebanon, Morocco, etc. and be taught by faculty with appropriate area expertise in Arabic, Women’s and Gender Studies, and/or Ethnic Studies. The course focuses on topics such as history, politics, culture, and gender relations within the society of study. Workload and learning outcomes are commensurate with a semester-long three credit hour course. Guest lectures in the host country are an important component of the course as they bring a fresh, authentic perspective to the aforementioned topics discussed. There will be three three-hour meetings prior to travel, required reading, and one three-hour meeting after travel. In the host country, students will spend seven days (five-eight hours per day) in seminars, discussions, and site visits. Student grades are determined on the basis of participation, attendance, a daily experiential learning journal, interviews with guest speakers, and a final exam. Offered as ARAB 349, ETHS 349 and WGST 349.

WGST 352. African Feminisms. 3 Units.
This course traces the history of African feminism from its origins within traditions through to a more contemporary theoretical analysis of gender, marriage, and motherhood seen from an Afrocentric perspective. Approaches studied are those that pertain to anthropology, history, literature, sociology, and culture. African feminist theory of scholars such as Filomina Steady, Cheikh Anta Diop, Buchi Emecheta, Ifi Amadiume, Obioma Nnameka, Oyeronko Oyewumi, and Calixthe Beyala will be studied and there will be some comparative analysis of Western theories to show how African feminisms are clearly distinct. Theories on these feminisms will be presented, and in the process, students will look at cases of women in Cameroon, Nigeria, Ghana, Kenya, and Senegal. It is commonly believed that African women were defined for a long time according to constructs of Western anthropology. This course will thus look at social institutions such as woman-to-woman marriage, matriarchy, and various women’s rituals in order to identify African constructs of gender, family, kinship, marriage, and motherhood. Offered as ETHS 352 and WGST 352.
WGST 353. Women in American History I. 3 Units.
The images and realities of women's social, political, and economic lives in early America. Uses primary documents and biographers to observe individuals and groups of women in relation to legal, religious, and social restrictions. Offered as HSTY 353, WGST 353, and HSTY 453.

WGST 354. Women in American History II. 3 Units.
With HSTY 353, forms a two-semester introduction to women's studies. The politics of suffrage and the modern woman's efforts to balance marriage, motherhood, and career. (HSTY 353 not a prerequisite.) Offered as HSTY 354, WGST 354, and HSTY 454.

WGST 359. Visual Culture of Medieval Women. 3 Units.
This course will consider the roles of women as patrons, subjects, producers and consumers of visual culture, focusing particularly on the twelfth through fifteenth centuries. Throughout the course, we will study the different ways medieval men and women perceived, read, figured, and interacted with the female body, which was frequently seen as a fraught site of desire and repulsion, fear and fascination. Students will be asked to read primary sources as well as critical materials that address contradictory constructions of gender and sex in medieval images and texts. The course, therefore, will not simply focus on artistic production, but will include readings and discussions of social and political history, theology, and literature of the Middle Ages. Offered as ARTH 359 and ARTH 459; cross-listed as WGST 359 since it focuses on the role of women in visual culture and so can satisfy a requirement in the program for the course on women in the arts. Offered as ARTH 359, ARTH 459 and WGST 359.

WGST 360. Global Politics of Fertility, Family Planning, and Population Control. 3 Units.
This course offers an anthropological examination of fertility behaviors around the world. In particular, it explores various historical, cultural, socioeconomic, political, and technological factors contributing to reproductive activities. After introducing the anthropological approaches to the study of fertility, the course will delve into the ways to regulate fertility in historical and contemporary times, various factors contributing to fertility change, state intervention in reproduction through voluntary and coercive family planning programs, and new reproductive technologies and ethical concerns surrounding assisted reproduction and abortion. Offered as ANTH 360, ANTH 460 and WGST 360.

WGST 363. Gender and Sexuality in America. 3 Units.
This multicultural seminar uses a mixture of historical text, gender theory, personal biography, and artistic expression to explore changing notions of gender and sexuality over the past two centuries in the United States. Offered as HSTY 363, HSTY 463 and WGST 363.

WGST 365. Gender and Sex Differences: Cross-cultural Perspective. 3 Units.
Gender roles and sex differences throughout the life cycle considered from a cross-cultural perspective. Major approaches to explaining sex roles discussed in light of information from both Western and non-Western cultures. Offered as ANTH 365, ANTH 465 and WGST 365.

WGST 370. Women in Organizations. 3 Units.
The purpose of this course is to explore the unique challenges of life for women in their twenties as they increase understanding of the issues surrounding women, ambition, and success in a variety of organizations and professions. At this stage of life there are many choices women can make regarding careers and relationships. This course will broaden understanding of the context of work in women's lives and help women and men understand the leadership and managerial issues that will surround them in organizations. Offering more complex understandings of issues women face in the workplace related to race and gender, the course will help increase self knowledge about personal identity and direction, values, and abilities including the enhancement of leadership capabilities. It will also facilitate career development, improving the ability of individual women to be choiceful about the quality of integration of both personal and professional life. Offered as ORBH 370 and WGST 370.

WGST 372. Work and Family: U.S. and Abroad. 3 Units.
Covers the impact on human lives of the interface between work and family; the different ways gender structures the experience of work and family depending upon racial and ethnic background, social class, age, and partner preference; the impact of historical context on work-family experiences; work-family policies in the United States and other countries. Offered as SOCI 372, WGST 372, and SOCI 472.

WGST 373. Women and Medicine in the United States. 3 Units.
Students in this seminar will investigate the experiences of American women as practitioners and as patients. We will meet weekly in the Dittrick Medical Museum for discussion of texts and use artifacts from the museum's collection. After a unit exploring how the female body was viewed by medical theorists from the Galenic period to the nineteenth-century, we will look at midwives, college-trained female doctors and nurses, and health advocacy among poor populations. We will then look at women's experiences in terms of menstruation, childbearing, and menopause, before exploring the cultural relationship between women and psychological disorders. Offered as HSTY 373, HSTY 473, and WGST 373.

WGST 383. Gender Issues in Feminist Art: The 20th/21st Century. 3 Units.
This course aims at understanding the myriad ways issues of gender have been encoded and/or played out in 20th and early 21st century art. A variety of paintings, sculpture, photographs and performances by women, gays and other marginalized groups, especially those that engage in “the discourse of the body,” will be examined through a gender-oriented focus. Analysis of a variety of provocative readings will provide methodologies useful for assessing aesthetic and political meanings in modern and contemporary art across national boundaries. Special emphasis will be placed on women artists who have recently begun to integrate gender and ethnicity. Offered as ARTH 383, WGST 383 and ARTH 483.

WGST 396. SAGES Capstone. 3 Units.
Capstone experience in the fields of Women's and Gender Studies for an in-depth, independent project of particular interest to the student. Students are strongly encouraged to work with a WGST program faculty member, but some projects may be supervised by faculty in other areas or by other qualified professionals. All capstones require a WGST faculty advisor's approval of the proposal prior to registration. Open to juniors and seniors majoring in Women's and Gender Studies. Counts as SAGES Senior Capstone. Prereq: WGST 201; Junior or Senior standing with major/minor in WGST.
Arts degree. Requirements for the major are as follows:

The World Literature Program offers a major leading to the Bachelor of Arts degree. Requirements for the major are as follows:

**Undergraduate Programs**

**Major**

The World Literature Program offers a major leading to the Bachelor of Arts degree. Requirements for the major are as follows:

**Required Courses:**

- WLIT 211 World Literature I 3
- WLIT 212 World Literature II 3
- One of the following:
  - ENGL/WLIT 290 Masterpieces of Continental Fiction 3
  - ENGL/WLIT 291 Masterpieces of Modern Fiction 3
- One of the following:
  - WLIT/CLSC 203 Gods and Heroes in Greek Literature 3
  - WLIT/CLSC 204 Heroes and Hustlers in Latin Literature 3
  - ENGL/WLIT 387 Literary and Critical Theory 3
- Two courses in literature at the 300 level in a language other than English 6
- WLIT 390 Topics in World Literature 3
- Twelve hours of electives 12

**Total Units** 33

All literature courses at the 200 and 300 levels offered by the Departments of Modern Languages and Literatures, Classics, and English are approved as world literature courses.

**Undergraduate Honors**

The honors program in world literature is for especially talented and dedicated majors. Requirements for honors are: 1) a GPA of at least 3.5 in the major, and 2) an honors thesis completed over the course of two semesters in the senior year, devoted to the investigation of a literary or cultural topic. Honors students enroll in WLIT 397 Honors Thesis I and WLIT 398 Honors Thesis II and write their thesis under the supervision of a WLIT faculty advisor. The thesis must be approved by a second faculty member and receive a grade of B or better. Students who qualify receive their degrees "with Honors in World Literature." A registration/proposal form for students electing honors must be completed by the end of the second week of classes in each of the two semesters.

**Minor**

The minor in world literature requires:

**Required Courses:**

- WLIT 211 World Literature I 3
- WLIT 212 World Literature II 3
- Nine credits of electives chosen in consultation with a program advisor

**Total Units** 15

**BA in Classics: Classical Tradition Concentration**

Students interested in world literature may also be interested in the new Classical Tradition Concentration, one of three tracks for a BA in Classics. For course information, please visit the Department of Classics page (p. 92).

**Graduate Program**

The World Literature Program offers a master of arts degree. Students pursuing the MA take courses that investigate visual arts, film, and music as well as literature, reflecting a belief that literature and the arts are in permanent dialogue. The program takes an interdisciplinary perspective in which cultural history and aesthetic history coexist.

Along with the Department of Classics, which hosts the program, World Literature is associated with other departments in the College of Arts and Sciences, including cognitive science, modern languages and literatures, philosophy, history, and religious studies.

The program offers tuition waivers and teaching assistant stipends to qualified students.

**Program Director**

Florin Berindeanu, PhD
Instructor, Department of Classics; Director, World Literature Program
WLIT 201. Greek Prose Authors. 3 Units.
Readings from authors such as Plato, Lysias, Xenophon, and Herodotus. Offered as GREK 201, GREK 401, WLIT 201 and WLIT 401.

WLIT 202. Introduction to Greek Poetry. 3 Units.
Primarily readings from Homer, Hesiod, and Theocritus. Selections from Greek lyric may be introduced at the instructor's discretion. Offered as GREK 202, GREK 402, WLIT 202, and WLIT 402.

WLIT 203. Gods and Heroes in Greek Literature. 3 Units.
This course examines major works of Greek literature and sets them in their historical and cultural context. Constant themes are war, wandering, tyranny, freedom, community, family, and the role of men and women within the household and the ancient city-state. Parallels with modern life and politics will be explored. Lectures and discussions. Offered as CLSC 203 and WLIT 203.

WLIT 204. Heroes and Hustlers in Latin Literature. 3 Units.
This course constitutes the second half of a sequence on Classical literature. Its main themes are heroism vs. self-promotion, love vs. lust, and the struggle between democracy and tyranny. These topics are traced in a variety of literary genres from the period of the Roman republic well into the empire. Parallels with modern life and politics will be drawn. Offered as CLSC 204 and WLIT 204.

WLIT 211. World Literature I. 3 Units.
Survey of literature from antiquity to 1600. May include Western and non-Western texts by Homer, Vergil, Ovid, St. Augustine, Dante, Boccaccio, Rabelais, Cervantes, Sei Shonagon, Basho, and the Bhagavad Gita.

WLIT 212. World Literature II. 3 Units.
Survey of literature from 1600 to present. May include Western and non-Western texts by Swift, Voltaire, Rousseau, Tolstoi, Baudelaire, Austen, Mann, Kafka, Lispector, Marmon Silko, Soyinka.

WLIT 220. Art & Literature in the Classical Tradition, Pt 1: Renaissance and Baroque (14th to 17th centuries). 3 Units.
Through lectures, varied assignments, and visits to the Cleveland Museum of Art this course will introduce students to the major issues in the study of early modern art and literatures. The emphasis will inevitably be on Italy, as the place where the physical remains of ancient Rome confronted and inspired such remarkable masters as Michelangelo (as poet and artist), Palladio, Gian Lorenzo Bernini, Nicholas Poussin (Bernini and Poussin are represented in the CMAI), though some artists -- notably Leonardo -- resisted the lure of the classical past. From Italy new ideas spread to the rest of Europe and beyond. We will not have much time to study Shakespeare in the course, but we will not be able to ignore the greatest author of the Renaissance period. Like Shakespeare, we will move between the court and the city, between scenes of often-endangered order and scenes of sometimes-productive disorder, in which classical models provided a key cultural and even psychological resource in challenging times. Recommended preparation: CLSC 112. Offered as CLSC 220 and WLIT 220.

WLIT 222. Classical Tradition 2: Birth of Archaeology. 3 Units.
The course will focus on the history of diverse methods for studying societies remote in time and space; i.e., on the formation of the distinct disciplines of archaeology and anthropology, and the interest in the origins of human society and cultural practices. The birth of archaeology occurred in the context of the profound transformation of European cultural life in the eighteenth century, the era of the Enlightenment. On the basis of a range of cultural productions (literary and historical texts, objects of luxury and use, etc.), we will study visual and literary works and consider the relationship between different modes of artistic production and expression, as well as the marketing and display of prestigious objects, whether ancient or modern. We will consider the eighteenth-century model of experiential education, the "Grand Tour," and the formation of private and public collections, as well as the emergence of the museum as institution. Finally, we will also consider important recent work on the relationship between the production of luxury commodities (sugar, coffee, tea, etc.) through the plantation economy in the Americas and beyond and the development of attitudes and ideas in Europe. Offered as CLSC 222 and WLIT 222.

WLIT 224. Sword and Sandal: The Classics in Film. 3 Units.
Gladiator. Alexander. The 300. Contemporary society's continuing fascination with the ancient world is undeniable; and yet the causes underlying this phenomenon are not quite so readily apparent. In this course we will watch and discuss a number of movies about the ancient world, running the gamut from Hollywood classics such as Ben-Hur and Spartacus to more recent treatments (the aforementioned 300 and Gladiator, for starters), and from the mainstream and conventional (Clash of the Titans, Disney's Hercules) to the far-out and avant-garde (Fellini's Satyricon, anyone?). As we do so we'll learn quite a bit about the art and economics of film, on one hand, and the ancient world, on the other. And yet what we'll keep coming back to are the big questions: what does our fascination with the ancient Mediterranean tell us about ourselves as a society? Why do such movies get made, and what kinds of agendas do they serve? To what extent can we recapture the past accurately? And if we can't, are we doomed to just endlessly projecting our own concerns and desires onto a screen, and dressing them in togas? No knowledge of ancient languages is required for this course. Offered as CLSC 224 and WLIT 224.
WLIT 225. Japanese Popular Culture. 3 Units.
This course highlights salient aspects of modern Japanese popular culture as expressed in animation, comics and literature. The works examined include films by Hayao Miyazaki, writings by Kenji Miyazawa, Haruki Murakami and Banana Yoshimoto, among others. The course introduces students to essential aspects of modern Japanese popular culture and sensibility. Offered as JAPN 225 and WLIT 225.

WLIT 228. Development of Theater: Beginnings to English Renaissance. 3 Units.
Theater 228/World Literature 228 explores the foundations of theater in Western civilization, beginning with Greece and then charting and analyzing the developments in playwriting, design, acting and theater architecture. Students read a wide variety of plays in order to obtain a comprehensive understanding of the history of the art form, but also learn how theater has played an integral societal function as a medium of political, economic, and cultural commentary. Development of Theater I explores developments from Aeschylus to the English Renaissance. Offered as THTR 228 and WLIT 228. Prereq: Sophomore standing.

WLIT 229. Development of Theater: Renaissance to Romanticism. 3 Units.
THTR 229 explores the many developments in playwriting, design, acting, and theater architecture across the world. Students read a wide variety of plays in order to obtain a comprehensive understanding of the history of the art form, but also learn how theater has played an integral societal function as a medium of political, economic, and cultural commentary. Development of Theater II not only explores the development of theatrical conventions in Spain, England, Italy, France and other European countries that lead to the creation of modern drama, but the course also offers an in-depth look at the history and conventions of theater in India, Korea, China, and Japan. Offered as THTR 229 and WLIT 229. Counts as SAGES Departmental Seminar. Prereq: Sophomore standing.

WLIT 232. Vergil. 3 Units.
Primarily readings from The Aeneid; selections from Vergil's other work may be introduced at instructor's discretion. Recommended preparation: LATN 201 or equivalent. Offered as LATN 202, LATN 402, WLIT 232 and WLIT 432.

WLIT 235. Asian Cinema and Drama. 3 Units.
Introduction to major Asian film directors and major traditional theatrical schools of India, Java/Bali, China, and Japan. Focus on the influence of traditional dramatic forms on contemporary film directors. Development of skills in cross-cultural analysis and comparative aesthetics. Offered as ASIA 235 and WLIT 235.

WLIT 241. Latin Prose Authors. 3 Units.
Reading and discussion of such prose authors as Cicero, Caesar, Livy or Pliny. Offered as LATN 201, LATN 401, WLIT 241 and WLIT 441. Prereq: LATN 102 or equivalent.

WLIT 245. Classical Japanese Literature in Translation. 3 Units.
Readings, in English translation, of classical Japanese poetry, essays, narratives, and drama to illustrate essential aspects of Japanese culture and sensibility before the Meiji Restoration (1868). Lectures explore the sociohistorical contexts and the character of major literary genres; discussions focus on interpreting the central images of human value within each period. Japanese sensibilities compared to and contrasted with those of Western and other cultures. Offered as JAPN 245 and WLIT 245.

WLIT 255. Modern Japanese Literature in Translation. 3 Units.
Focus on the major genres of modern Japanese literature, including poetry, short story, and novel (shosetsu). No knowledge of Japanese language or history is assumed. Lectures, readings, and discussions are in English. Films and slides complement course readings. Offered as JAPN 255 and WLIT 255.

WLIT 285. The Hispanophone World. 3 Units.
A survey of the imaginative literatures in a variety of genres from the Spanish-speaking world, including texts authored by Hispanics living in the United States. The selections will help students gain a greater understanding and appreciation of the impact and adaptation of Spanish language and culture among widely diverse populations of the world over the past centuries. Counts towards Spanish major as related course. No knowledge of Spanish required. Offered as SPAN 285 and WLIT 285.

WLIT 290. Masterpieces of Continental Fiction. 3 Units.
Major works of fiction from the 19th century and earlier. Offered as ENGL 290 and WLIT 290.

WLIT 291. Masterpieces of Modern Fiction. 3 Units.
Major works of fiction of the 20th century. Offered as ENGL 291 and WLIT 291.

WLIT 295. The Francophone World. 3 Units.
The course offers an introduction to the Francophone World from a historical, cultural, and literary perspective. The Francophone World includes countries and regions around the globe with a substantial French-speaking population (and where French is sometimes, but not always, an official language): North America (Louisiana, Quebec, and Acadia); North Africa (Tunisia, Morocco, Algeria, and Egypt); the Middle-East (Lebanon, Syria); the Caribbean (Martinique, Guadeloupe, Haiti); Southeast Asia (Vietnam); and Europe (France, Belgium, Switzerland, and Luxembourg). FRCH 295 provides a comprehensive overview of the Francophone World, while focusing on a particular area or areas in any given semester. Offered as ETHS 295, FRCH 295, and WLIT 295.

WLIT 300. The City in Literature. 3 Units.
Focus on major cities of the world as catalysts and reflections of cultural and historical change. Interdisciplinary approach utilizing the arts, literature, social sciences. Examples include Berlin at the turn of the century; Paris in literature and film; Tokyo in history and literature. Offered as WLIT 300 and WLIT 400.

WLIT 306. Tragedy. 3 Units.
Reading and interpretation of selected plays of Aeschylus, Euripides, and Sophocles. Offered as GREK 306, GREK 406, WLIT 306, and WLIT 406.

WLIT 307. History. 3 Units.
Extensive reading in Thucydides' History of the Peloponnesian War, especially Books VI and VII, the expedition against Syracuse. Offered as GREK 307, GREK 407, WLIT 307 and WLIT 407. Prereq: GREK 202 or equivalent.

WLIT 308. The Paris Experience. 3 Units.
Three-week immersion learning experience living and studying in Paris. The focus of the course is the literature and culture of the African, Arab, and Asian communities of Paris. Students spend a minimum of fifteen hours per week visiting cultural centers and museums and interviewing authors and students about the immigrant experience. Assigned readings complement course activities. Students enrolled in FRCH 308/408 do coursework in French. WLIT 308/408 students have the option of completing coursework in English. Graduate students have additional course requirements. Offered as FRCH 308, WLIT 308, FRCH 408, and WLIT 408.
WLIT 311. Homer. 3 Units.
Reading and translation of extensive selections from the Odyssey. Introduction to epic meter, to Homeric Greek, and to the poet’s style. Consideration of evidences of oral composition and discussion of the heroic tradition. Offered as GREK 311, GREK 411, WLIT 311 and WLIT 411.

WLIT 314. The Poetics of Eros: Love Poetry from Sappho to Shakespeare and Beyond. 3 Units.
This course will explore the theme of love in all its multiplicity of meanings and changes over time from its first appearances in Near Eastern poetry (Song of Songs) and Greek lyric (the titular Sappho) through its various elaborations, Roman, Medieval, Renaissance, and Romantic. It will also address theoretical inquiries into the nature and purpose of erotic desire and its evaluation as an aesthetic phenomenon, including Freudian theory and modern contributions such as Roland Barthes and Georges Bataille. No knowledge of the original languages required. Offered as CLSC 314 and WLIT 314.

WLIT 315. Mysticism and Literature. 3 Units.
This co-taught seminar will explore and compare mystical elements in selected literary and theoretical works from the West and the East. Comparisons will focus on a number of interrelated sub-themes such as mind, language, alienation, innocence, experience, life, death, cosmogony, cosmology, good, evil, God/gods, and nature (the ecosystem). Offered as WLIT 315, WLIT 315, WLIT 415 and WLIT 415.

WLIT 316. Greek Tragedy. 3 Units.
This course provides students the opportunity to read a significant number of ancient Greek tragedies in modern English translations. We shall read, study, and discuss selected works by Aeschylus, Sophocles, and Euripides, and attempt to understand the plays as literature composed for performance. We shall study literary elements within the plays and theatrical possibilities inherent in the texts. As we read the plays, we shall pay close attention to the historical context and look for what each play can tell us about myth, religion, and society in ancient Athens. Finally, we shall give occasional attention to the way these tragic dramas and the theater in which they were performed have continued to inspire literature and theater for thousands of years. Lectures will provide historical background on the playwrights, the plays, the mythic and historical background, and possible interpretation of the texts as literature and as performance pieces. Students will discuss in class the plays that they read. The course has three examinations and a final project that includes a short essay and a group presentation. Offered as CLSC 316, WLIT 316, WLIT 416.

WLIT 318. Comedy. 3 Units.
Origin, ambiance, and development of Greek Old Comedy and persisting characteristics of the genre. Translation of selected plays from Greek into English. Offered as GREK 308, GREK 408, WLIT 318, and WLIT 418.

WLIT 322. Roman Drama and Theater. 3 Units.
This course is designed as a continuation of and companion to CLSC/WLIT 316/416 Greek Tragedy in English Translation, although it may be taken without having taken, or before having taken, that course. Students in Roman Drama and Theater will read a significant number of ancient Roman plays in modern English translation and study non-literary theatrical entertainment of the Roman Republic and Empire, including mime and pantomime, gladiatorial shows, political speeches, courtroom drama, and various other spectacles. The dramatic texts that we shall study include the fragments of early Latin drama, selected comedies by Plautus and Terence, and the tragedies of Seneca, and the forensic speeches of statesman such as Cicero. We shall also consider Greek and Roman literature that comments on Roman theatrical practices. These works will be read for their literary merits and theatrical possibilities, while at the same time examining them for what they can tell us about Roma culture and society. Similarly, when studying the non-literary theatrical works we shall examine historical and theatrical context including archaeological evidence from theaters and amphitheaters and material remains (masks, depictions of actors and gladiators on vases, terra cotta lamps, mosaics, etc.). Finally, while the majority of the course focuses on drama originally written in Latin and theatrical entertainments performed in ancient Rome, the course will conclude with a survey of selected post-classical works indebted to the tradition of Roman drama and theater. Authors to be studied include Hrotsvitha, Marlowe, Shakespeare, Racine, Mollère, and the legacy of Roman drama and theater in contemporary stage and cinema such as Sondelm's A Funny Thing Happened on the Way to the Forum. Thus a secondary concern will be to consider how and in what ways the legacy of Roman drama and theater has continued to shape the dramatic arts since antiquity. Offered as CLSC 322, CLSC 422, WLIT 322, and WLIT 422.

WLIT 323. Angels and Daimons: The Origins of Inspiration. 3 Units.
The age old myth of the pact with the devil is central to some of the masterpieces of Western literature. Goethe's poem is focused on the battle between good and evil, angelic and demonic as archetypes of humanity. The confrontation between the two forces illustrates the perennial dichotomy of creation vs. destruction (apocalypse). They represent the origin of life and its continuation even when the angelic has been defeated. The course will contain philosophical and literary readings that treat the opposition, and sometimes simultaneity, of angelic and daimonic. Plato and the Neo-Platonic tradition will be explored in the course as well as various readings from Middle Ages up to 18th century that address the issue of inspiration through contamination with the mysterious forces of the invisible world. Offered as CLSC 323, CLSC 423, WLIT 323 and WLIT 423.

WLIT 324. The Sublime and Grotesque in Literature. 3 Units.
Early on in Western culture the question of sublime and grotesque was addressed by philosophers and writers. Aristotle and especially Longinus initiated the debate over what exactly made a work of art "sublime" or "Grotesque." This debate eventually in the 18th century gave birth to the discipline of aesthetics, which is one of the main foci of this course. To that end, in this course we will examine a few literary works in light of the most representative theories around the concept of sublime and grotesque: Aristotle, Longinus, Kant, Burke, Baumgartner, Nietzsche and Kierkegaard. Their theories will be applied to some of the most celebrated literary masterpieces written by Homer, Ovid, Dante, Cervantes and others. Offered as CLSC 324, CLSC 424, WLIT 324 and WLIT 424.
WLIT 325. Hispanic Intellectuals and Society: A Critical Approach. 3 Units.
This course offers an overview of the most important critical approaches to Spanish American culture and literature, with a socio-historical emphasis. Some of the authors we will discuss are Angel Rama, Jose Antonio Cornejo Polar and Nestor Garcia Canclini. We will analyze how the Latin American intellectuals had thought about specific issues such as identity, race, ideology, colonial and post-colonial relations with the metropolis and the process of formation of the nations in the continent. The class, the discussions, exams, oral presentations and papers will be in Spanish. Some of the readings must be in English, but most of them will be in Spanish. Offered as SPAN 325, SPAN 425, ETHS 325, WLIT 325 and WLIT 425.

WLIT 329. Modern and Contemporary Drama. 3 Units.
Theatre 329 explores the development of western drama and theatre from 1860 through present-day productions. The course emphasizes the relationship between different theatrical representations and their historical and social context. Shakespeare's well-known dictum that "theatre holds a mirror up to nature" is expanded when one examines who is holding that mirror, and how their actions participate in the constantly shifting construction of culture. Given this premise, the course investigates the development of specific European cultures (England, France, Germany, and Italy) as well as other regions (the United States, South America, and Russia) through the - live and literary - representations they make of themselves. Offered as THTR 329 and WLIT 329. Prereq: Sophomore Standing

WLIT 331. Dante and the Classical Tradition: Middle Ages into Modernity. 3 Units.
"Dante and the Classical Tradition" will introduce through the complex work of Dante the concept of classical tradition as an all-encompassing cultural term. Dante represents the grandiose example of the artist who seeks the complete synthesis between humanities and sciences and their incessant collaborative effort to broaden as much as possible the depths of human knowledge. Philosophy, Geography, Physics, Linguistics, Astronomy and Literature are steady landmarks in Dante's work through which he aims to speak about the necessity of ever maintaining continuity between all domains of human knowledge. Dante's work proposes high levels of excellence and while the course's focus will be on his literary output the scientific interests and treatises he demonstrates will not be omitted during class discussion and bibliography included in the syllabus. Last but not least the focus will be on how we understand today the concept of classical tradition as a result of Dante's writings. Offered as CLSC 331, CLSC 431, WLIT 331 and WLIT 431.

WLIT 333. Contemporary Caribbean Literature. 3 Units.
In addition to developing a general familiarity with the literature and history of this region, students will acquire an awareness of the interrelation of national identity, memory, and language in the texts produced by contemporary Caribbean authors, and of the cultural hybridity characteristic of this production. The themes treated by these authors include colonialism and postcolonialism, cultural and religious syncretism, and sexual politics. Offered as SPAN 333, SPAN 433, ETHS 333, WLIT 333 and WLIT 433.

WLIT 334. Literature of the Republic. 3 Units.
A reading course in prose and poetry of the Roman Republic. Extensive selections from Cicero and Catullus, and one comedy of Terence. Offered as LATN 305, LATN 405, WLIT 334, and WLIT 434.

WLIT 335. Women in Developing Countries. 3 Units.
This course will feature case studies, theory, and literature of current issues concerning women in developing countries primarily of the French-speaking world. Discussion and research topics include matriarchal traditions and FGM in Africa, the Tunisian feminist movement, women, Islam, and tradition in the Middle East, women-centered power structures in India (Kerala, Pondichery), and poverty and women in Vietnam, Laos, and Cambodia. Guest speakers and special projects are important elements of the course. Seminar-style format, taught in English, with significant disciplinary writing in English for WGST, ETHS, and some WLIT students, and writing in French for FRCH and WLIT students. Writing assignments include two shorter essays and a substantial research paper. Offered as ETHS 335, FRCH 335, WLIT 335, WGST 335, FRCH 435 and WLIT 435. Counts as SAGES Departmental Seminar.

WLIT 336. Elegiac Poetry. 3 Units.
In this course we shall translate and interpret selected elegies by Catullus, Tibullus, Properlius, and Ovid. We will also devote considerable class time to the reading and in-depth analysis of the major secondary literature, starting with the introductory pieces in the newest companions published by Brill and Cambridge, and moving on to fundamental articles and perhaps even a full scholarly monograph. Offered as LATN 456, LATN 456, WLIT 336, and WLIT 436.

WLIT 338. The Cameroon Experience. 3 Units.
Three-week immersion learning experience living and studying in Cameroon. The focus of the course is the culture, literature, and language of Francophone Cameroon, with some emphasis on Anglophone Cameroon. Students spend a minimum of fifteen hours per week visiting cultural sites and attending arranged courses at the University of Buea. Students will prepare a research paper. Coursework is in French. To do coursework in English, students should enroll in WLIT 338/438 or ETHS 338/438. Offered as ETHS 338, FRCH 338, WLIT 338, ETHS 438, FRCH 438, and WLIT 438.

WLIT 339. Latin American Poetic Revolt. 3 Units.
Introduction to most important poets in contemporary Latin America, a region home to a significant number of eminent poets, including Nobel Laureates from Chile, Gabriela Mistral and Pablo Neruda. The course focuses on detailed textual analysis of pivotal works, combined with historical-literary perspective, so students gain insight into the diverse styles and tendencies that reflect the tumultuous history of poetry's development in a relentless search for a Latin American cultural identity. Offered as SPAN 339, SPAN 439, WLIT 339 and WLIT 439.
WLIT 340. Seminar in Enlightenment Art and Literature: Piranesi and Vico. 3 Units.
This course explores aspects of the European eighteenth century as a transformative epoch in the history of western culture. Though the Enlightenment is usually associated especially with France, in this course we will focus on Italy, as the irresistible goal of travelers taking part in the "Grand Tour," and as a landscape of powerful ancient and modern architecture and artworks universally recognized as exemplary. In particular we will study one of the strangest and most fascinating visual artists of the period, the self-proclaimed architect Giovanni Battista Piranesi (1720-1778) famous no less now than in his own time for his fantastic prison engravings as well as his views of Rome, involving a radical rethinking of the city as a particular kind of inhabited as well as imagined space. Piranesi's polemical response to the advocates of the Greek revival, then coming into fashion, will lead into discussion of the key philosophical debates and aesthetic shifts of the time, notably the emergence of the notion of the sublime as a category essentially subversive of western ideals of rationality and still present -- and potent -- in our own culture. Finally we will place Piranesi within a current of discussion of the origins and nature of language and of human society in general, not least as manifested in architecture and other symbolic practices. The leading figure here is the Neapolitan G.B. Vico, whose New Science of 1725 remains one of the most stimulating texts in the western intellectual tradition. Offered as CLSC 340, COGS 340, WLIT 340, CLSC 440, and WLIT 440.

WLIT 342. Latin American Feminist Voices. 3 Units.
Examination of the awakening of feminine and feminist consciousness in the literary production of Latin American women writers, particularly from the 1920s to the present. Close attention paid to the dominant themes of love and dependency; imagination as evasion; alienation and rebellion; sexuality and power; the search for identity and the self-preservation of subjectivity. Readings include prose, poetry, and dramatic texts of female Latin American writers contributing to the emerging of feminist ideologies and the mapping of feminist identities. Offered as SPAN 342, SPAN 442, ETHS 342, WGST 342, WLIT 342, and WLIT 442.

WLIT 343. The New Drama in Latin America. 3 Units.
Representative works of contemporary Latin American drama. Critical examination of selected dramatic works of twentieth-century Latin America provides students insight into the nature of drama and into the structural and stylistic strategies utilized by Latin American dramatists to create the "new theater," one which is closely related to Latin American political history. Offered as SPAN 343, SPAN 443, ETHS 343, WLIT 343 and WLIT 443.

WLIT 345. Japanese Women Writers. 3 Units.
Contributions of women writers to the literature of pre-modern and modern Japan; investigations of how their works exemplify and diverge from "mainstream" literary practices. Emphasis on the social and cultural contexts of the texts. Offered as JAPN 345 and WLIT 345.

WLIT 346. Survey of Latin Literature. 3 Units.
Reading and discussion of selections from the various genres of Latin literature of the Roman Republic and Empire such as historical narrative, lyric and elegiac poetry, comic drama, forensic rhetoric, philosophical dialogue, didactic literature, letters, and epigrams. Offered as LATN 306, LATN 406, WLIT 346, and WLIT 446.

WLIT 347. Livy. 3 Units.
Readings in Books I and XXI, with other selections from this major Augustan historian. Offered as LATN 307, LATN 407, WLIT 347, and WLIT 447.

WLIT 348. Horace: Odes and Epodes. 3 Units.
Readings and discussion of extensive selections from the poetry of Horace; consideration of Horace as exemplifying the spirit of the Augustan Age. Offered as LATN 308, LATN 408, WLIT 348, and WLIT 448.

WLIT 349. Medieval Latin. 3 Units.
Reading and interpretation of Latin texts from the Middle Ages. Material selected according to the needs and interests of students. Offered as LATN 309, LATN 409, WLIT 349, and WLIT 449.

WLIT 351. Latin Didactic Literature. 3 Units.
Readings from didactic poetry such as Lucretius and Vergil's Georgics. Parodies like Ovid's Ars Amatoria or prose treatises may also be introduced. Offered as LATN 351, LATN 451, WLIT 351, and WLIT 451. Prereq: 200-level LATN or equivalent.

WLIT 352. History. 3 Units.
Works of the Roman historian Cornelius Tacitus; his Annals I-VI dealing with his portrait of Emperor Tiberius and the Empire after the death of Augustus. Offered as LATN 352, LATN 452, WLIT 352, and WLIT 452.

WLIT 354. Drama. 3 Units.
Reading of at least one play each by Plautus and Terence. Attention to the history of Latin and Greek New Comedy, and the contrasting styles of the two authors. Offered as LATN 354, LATN 454, WLIT 354, and WLIT 454.

WLIT 355. Modern Japanese Novels and the West. 3 Units.
This course will compare modern Japanese and Western novellas, drama, and novels. Comparisons will focus on the themes of family, gender and alienation, which subsume a number of interrelated sub-themes such as marriage, home, human sexuality, amae (dependence), innocence, experience, death, God/gods, and nature (the ecosystem). Offered as JAPN 355, WLIT 355. Counts as SAGES Departmental Seminar.

WLIT 356. Afro-Hispanic Literature. 3 Units.
This course will survey the literary and cultural production of writers and artists of African descent in Latin America and the Caribbean, paying attention to both their creative and theoretical texts. Discussion of questions of race and ethnicity will allow students to explore the ways in which these texts reframe the idea of national identity and cultural belonging in the context of the nation-state, whose traditional centrality is being weakened through the effects of migration and exile. Readings include works by writers from Cuba, Puerto Rico, Dominican Republic, Costa Rica, Colombia, Panama, Ecuador, and Peru. Offered as SPAN 356, SPAN 456, ETHS 356, WLIT 356 and WLIT 456.

WLIT 358. Latin American Cinema. 3 Units.
This course is designed to introduce students to the basic tools of film analysis as well as to the major trends and movements in Latin American cinema from the 1960s to the present. Through the analysis of representative films from Latin America, the course will examine the development of a variety of cinematic styles, paying particular attention to the historical contexts in which the films were produced and to the political, cultural, and aesthetic debates that surrounded their production. Offered as SPAN 358, SPAN 458, ETHS 358, WLIT 358 and WLIT 458.
WLIT 363H. African-American Literature. 3 Units.
A historical approach to African-American literature. Such writers as Wheatley, Equiano, Douglass, Jacobs, DuBois, Hurston, Hughes, Wright, Baldwin, Ellison, Morrison. Topics covered may include slave narratives, African-American autobiography, the Harlem Renaissance, the Black Aesthetic, literature of protest and assimilation. Maximum 6 credits. Offered as ENGL 363H, ETHS 363H, WLIT 363H, ENGL 463H, and WLIT 463H. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

WLIT 365. German Literature in Translation. 3 Units.
Goethe defined "World Literature" (Weltliteratur) as "Intellectual Trade Relations" (geistiger Handelsverkehr). This course gives students the opportunity to study German literary works in translation and thus to trade intellectual relations with a literary culture previously unknown to them. Counts toward the German major only as a related course. No knowledge of German required. Offered as GRMN 365 and WLIT 365.

WLIT 365E. The Immigrant Experience. 3 Units.
Study of fictional and/or autobiographical narrative by authors whose families have experienced immigration to the U.S. Among the ethnic groups represented are Asian-American, Jewish-American, Hispanic-American. May include several ethnic groups or focus on a single one. Attention is paid to historical and social aspects of immigration and ethnicity. Maximum 6 credits. Offered as ENGL 365E, WLIT 365E, ENGL 465E, and WLIT 465E. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

WLIT 365N. Topics in African-American Literature. 3 Units.
Selected topics and writers from nineteenth, twentieth, and twenty-first century African-American literature. May focus on a genre, a single author or a group of authors, a theme or themes. Maximum 6 credits. Offered as ENGL 365N, ETHS 365N, WLIT 365N, ENGL 465N, and WLIT 465N. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

WLIT 365Q. Post-Colonial Literature. 3 Units.
Readings in national and regional literatures from former European colonies such as Australia and African countries. Maximum 6 credits. Offered as ENGL 365Q, ETHS 365Q, WLIT 365Q, ENGL 465Q, and WLIT 465Q. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

WLIT 366. Topics in Film. 3 Units.
Individual topics in film, such as a particular national cinema, horror films, films of Alfred Hitchcock, images of women in film, film comedy, introduction to film genres, Asian-cinema and drama, dance on screen, science fiction films, storytelling and cinema, and literature and film. Maximum 15 credits. A student who has previously taken ENGL 366C may receive credit for ENGL 368 only if the themes/topics are different. Offered as ENGL 368, ENGL 468, WLIT 368, and WLIT 468.

WLIT 370. Greek Prose Composition. 3 Units.
This course introduces students to the principles and practice of composing continuous passages of Greek prose. It is designed to review and to strengthen students' command of Attic forms while becoming more aware of the ways Greek syntax was employed to express thought. Via practice at writing Greek prose, the ultimate goal is for the students to become more proficient and sensitive readers of ancient Greek. Offered as GREK 370, GREK 470, WLIT 370 and WLIT 470.

WLIT 375. Russian Literature in Translation. 3 Units.
Topics vary according to student and faculty interest. May include Russian classical and modern literature, cinema, women writers, individual authors. May count towards Russian minor. No knowledge of Russian required. Offered as RUSN 375 and WLIT 375.

WLIT 380. Latin Prose Composition. 3 Units.
This course is designed to strengthen students' active command of Latin grammar and idiomatic prose style. At a basic level, students are trained to pay attention to details and thus write grammatically correct. Going beyond this, the course teaches Latin Idioms. Finally, it aims to develop students' intuitive feeling for the Latin language. The ultimate goal is to write in a Ciceronian prose style. Offered as LATN 370, LATN 470, WLIT 380, and WLIT 480.

WLIT 385. Hispanic Literature in Translation. 3 Units.
Critical analysis and appreciation of representative literary masterpieces from Spain and Latin America, and by Hispanics living in the U.S. Texts cover a variety of genres and a range of literary periods, from works by Cervantes to those of Gabriel Garcia Marquez. The course will examine the relationship between literature and other forms of artistic production, as well as the development of the Hispanic literary text within the context of historical events and cultural production of the period. Counts toward Spanish major only as related course. No knowledge of Spanish required. Offered as ETHS 385, ETHS 485, SPAN 385, SPAN 485, WLIT 385, and WLIT 485.

WLIT 387. Literary and Critical Theory. 3 Units.
A survey of major schools and texts of literary and critical theory. May be historically or thematically organized. Maximum 6 credits. Offered as ENGL 387, WLIT 387, ENGL 487, and WLIT 487. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

WLIT 390. Topics in World Literature. 3 Units.
In-depth examination of specific critical and literary theories and of their relevance for literature and culture studies. Authors, works and instructor may vary. Offered as WLIT 390 and WLIT 490.

WLIT 391. Introduction to Text Semiotics. 3 Units.
Introduction to Text Semiotics addresses both students of Literature and students in Cognitive Science. Most of the authors included in the reading list extend their linguistic approach towards fields that intersect literature, psychology, philosophy, aesthetics, and anthropology. The scholarly traditions of text analysis and structural theory of meaning, including authors from classical formalism, structuralism, structural semiotics, and new criticism will be connected to cognitive theories of meaning construction in text, discourse, and cultural expressions in general. The focus of this course, taught as a seminar, is on empirical studies, specific text analyses, discourse analyses, speech act analyses, and other studies of speech, writing, and uses of language in cultural contexts. This course thus introduces to a study of literature and cultural expressions based on cognitive science and modern semiotics—the new view that has been coined Cognitive Semiotics. Offered as COGS 391 and WLIT 391.
WLIT 395. French Literature in Translation. 3 Units.
Topics vary according to student and faculty interest. May include Francophone literature, literature and cinema, women writers, contemporary literature. Counts toward French major only as related course. No knowledge of French required. Offered as FRCH 395, WLIT 395, FRCH 495, and WLIT 495.

WLIT 397. Honors Thesis I. 3 Units.
Intensive study of a literary, linguistic, or cultural topic with a faculty member, leading to the writing of a research paper. Prereq: Senior status.

WLIT 398. Honors Thesis II. 3 Units.
Continuation of WLIT 397. Prereq: WLIT 397 and senior status.

WLIT 399. Independent Study. 1 - 3 Unit.
For majors and advanced students under special circumstances.

WLIT 400. The City in Literature. 3 Units.
Focus on major cities of the world as catalysts and reflections of cultural and historical change. Interdisciplinary approach utilizing the arts, literature, social sciences. Examples include Berlin at the turn of the century; Paris in literature and film; Tokyo in history and literature. Offered as WLIT 300 and WLIT 400. Prereq: Graduate standing.

WLIT 401. Greek Prose Authors. 3 Units.
Readings from authors such as Plato, Lysias, Xenophon, and Herodotus. Offered as GREK 201, GREK 401, WLIT 201 and WLIT 401.

WLIT 402. Introduction to Greek Poetry. 3 Units.
Primarily readings from Homer, Hesiod, and Theocritus. Selections from Greek lyric may be introduced at the instructor's discretion. Offered as GREK 202, GREK 402, WLIT 202 and WLIT 402.

WLIT 406. Tragedy. 3 Units.
Reading and interpretation of selected plays of Aeschylus, Euripides, and Sophocles. Offered as GREK 306, GREK 406, WLIT 306, and WLIT 406.

WLIT 407. History. 3 Units.
Extensive reading in Thucydides' History of the Peloponnesian War, especially Books VI and VII, the expedition against Syracuse. Offered as GREK 307, GREK 407, WLIT 307 and WLIT 407.

WLIT 408. The Paris Experience. 3 Units.
Three-week immersion learning experience living and studying in Paris. The focus of the course is the literature and culture of the African, Arab, and Asian communities of Paris. Students spend a minimum of fifteen hours per week visiting cultural centers and museums and interviewing authors and students about the immigrant experience. Assigned readings complement course activities. Students enrolled in FRCH 308/408 do coursework in French. WLIT 308/408 students have the option of completing coursework in English. Graduate students have additional course requirements. Offered as FRCH 308, WLIT 308, FRCH 408, and WLIT 408. Prereq: Graduate standing.

WLIT 411. Homer. 3 Units.
Reading and translation of extensive selections from the Odyssey. Introduction to epic meter, to Homeric Greek, and to the poet's style. Consideration of evidences of oral composition and discussion of the heroic tradition. Offered as GREK 311, GREK 411, WLIT 311 and WLIT 411.

WLIT 415. Mysticism and Literature. 3 Units.
This co-taught seminar will explore and compare mystical elements in selected literary and theoretical works from the West and the East. Comparisons will focus on a number of interrelated sub-themes such as mind, language, alienation, innocence, experience, life, death, cosmosogy, cosmology, good, evil, God/gods, and nature (the ecosystem). Offered as MLIT 315, WLIT 315, MLIT 415 and WLIT 415.

WLIT 416. Greek Tragedy. 3 Units.
This course provides students the opportunity to read a significant number of ancient Greek tragedies in modern English translations. We shall read, study, and discuss selected works by Aeschylus, Sophocles, and Euripides, and attempt to understand the plays as literature composed for performance. We shall study literary elements within the plays and theatrical possibilities inherent in the texts. As we read the plays, we shall pay close attention to the historical context and look for what each play can tell us about myth, religion, and society in ancient Athens. Finally, we shall give occasional attention to the way these tragic dramas and the theater in which they were performed have continued to inspire literature and theater for thousands of years. Lectures will provide historical background on the playwrights, the plays, the mythic and historical background, and possible interpretation of the texts as literature and as performance pieces. Students will discuss in class the plays that they read. The course has three examinations and a final project that includes a short essay and a group presentation. Offered as CLSC 316, WLIT 316, WLIT 416.

WLIT 418. Comedy. 3 Units.
Origin, ambiance, and development of Greek Old Comedy and persisting characteristics of the genre. Translation of selected plays from Greek into English. Offered as GREK 308, GREK 408, WLIT 318, and WLIT 418.

WLIT 422. Roman Drama and Theater. 3 Units.
This course is designed as a continuation of and companion to CLSC/WLIT 316/416 Greek Tragedy in English Translation, although it may be taken without having taken, or before having taken, that course. Students in Roman Drama and Theater will read a significant number of ancient Roman plays in modern English translation and study non-literary theatrical entertainment of the Roman Republic and Empire, including mime and pantomime, gladiatorial shows, political speeches, courtroom drama, and various other spectacles. The dramatic texts that we shall study include the fragments of early Latin drama, selected comedies by Plautus and Terence, and the tragedies of Seneca, and the forensic speeches of statesman such as Cicero. We shall also consider Greek and Roman literature that comments on Roman theatrical practices. These works will be read for their literary merits and theatrical possibilities, while at the same time examining them for what they can tell us about Roma culture and society. Similarly, when studying the non-literary theatrical works we shall examine historical and theatrical context including archaeological evidence from theaters and amphitheaters and material remains (masks, depictions of actors and gladiators on vases, terra cotta lamps, mosaics, etc.). Finally, while the majority of the course focuses on drama originally written in Latin and theatrical entertainments performed in ancient Rome, the course will conclude with a survey of selected post-classical works indebted to the tradition of Roman drama and theater. Authors to be studied include Holtsvitha, Marlowe, Shakespeare, Racine, Molière, and the legacy of Roman drama and theater in contemporary stage and cinema such as Sondelm's A Funny Thing Happened on the Way to the Forum. Thus a secondary concern will be to consider how and in what ways the legacy of Roman drama and theater has continued to shape the dramatic arts since antiquity. Offered as CLSC 322, CLSC 422, WLIT 322, and WLIT 422.
WLIT 423. Angels and Daimons: The Origins of Inspiration. 3 Units.
The age old myth of the pact with the devil is central to some of the masterpieces of Western literature. Goethe’s poem is focused on the battle between good and evil, angelic and demonic as archetypes of humanity. The confrontation between the two forces illustrates the perennial dichotomy of creation vs. destruction (apocalypse). They represent the origin of life and its continuation even when the angelic has been defeated. The course will contain philosophical and literary readings that treat the opposition, and sometimes simultaneously, of angelic and daimonic. Plato and the Neo-Platonic tradition will be explored in the course as well as various readings from Middle Ages up to 18th century that address the issue of inspiration through contamination with the mysterious forces of the invisible world. Offered as CLSC 323, CLSC 423, WLIT 323 and WLIT 423.

WLIT 424. The Sublime and Grotesque in Literature. 3 Units.
Early on in Western culture the question of sublime and grotesque was addressed by philosophers and writers. Aristotle and especially Longinus initiated the debate over what exactly made a work of art “sublime” or “Grotesque.” This debate eventually in the 18th century gave birth to the discipline of aesthetics, which is one of the main foci of this course. To that end, in this course we will examine a few literary works in light of the most representative theories around the concept of sublime and grotesque: Aristotle, Longinus, Kant, Burke, Baumgarten, Nietzsche and Kierkegaard. Their theories will be applied to some of the most celebrated literary masterpieces written by Homer, Ovid, Dante, Cervantes and others. Offered as CLSC 324, CLSC 424, WLIT 324 and WLIT 424.

WLIT 425. Hispanic Intellectuals and Society: A Critical Approach. 3 Units.
This course offers an overview of the most important critical approaches to Spanish American culture and literature, with a socio-historical emphasis. Some of the authors we will discuss are Angel Rama, Jose Antonio Cornejo Polar and Nestor Garcia Canclini. We will analyze how the Latin American intellectuals had thought about specific issues such as identity, race, ideology, colonial and post-colonial relations with the metropolis and the process of formation of the nations in the continent. The class, the discussions, exams, oral presentations and papers will be in Spanish. Some of the readings must be in English, but most of them will be in Spanish. Offered as SPAN 325, SPAN 425, ETHS 325, WLIT 325 and WLIT 425.

WLIT 431. Dante and the Classical Tradition: Middle Ages into Modernity. 3 Units.
“Dante and the Classical Tradition” will introduce through the complex work of Dante the concept of classical tradition as an all-encompassing cultural term. Dante represents the grandiose example of the artist who seeks the complete synthesis between humanities and sciences and their incessant collaborative effort to broaden as much as possible the depths of human knowledge. Philosophy, Geography, Physics, Linguistics, Astronomy and Literature are steady landmarks in Dante’s work through which he aims to speak about the necessity of ever maintaining continuity between all domains of human knowledge. Dante’s work proposes high levels of excellence and while the course’s focus will be on his literary output the scientific interests and treatises he demonstrates will not be omitted during class discussion and bibliography included in the syllabus. Last but not least the focus will be on how we understand today the concept of classical tradition as a result of Dante’s writings. Offered as CLSC 331, CLSC 431, WLIT 331 and WLIT 431.

WLIT 432. Vergil. 3 Units.
Primarily readings from The Aeneid; selections from Vergil’s other work may be introduced at instructor’s discretion. Recommended preparation: LATN 201 or equivalent. Offered as LATN 202, LATN 402, WLIT 232 and WLIT 432.

WLIT 433. Contemporary Caribbean Literature. 3 Units.
In addition to developing a general familiarity with the literature and history of this region, students will acquire an awareness of the interrelation of national identity, memory, and language in the texts produced by contemporary Caribbean authors, and of the cultural hybridity characteristic of this production. The themes treated by these authors include colonialism and postcolonialism, cultural and religious syncretism, and sexual politics. Offered as SPAN 333, SPAN 433, ETHS 333, WLIT 333 and WLIT 433.

WLIT 434. Literature of the Republic. 3 Units.
A course in prose and poetry of the Roman Republic. Extensive selections from Cicero and Catullus, and one comedy of Terence. Offered as LATN 305, LATN 405, WLIT 334, and WLIT 434.

WLIT 435. Women in Developing Countries. 3 Units.
This course will feature case studies, theory, and literature of current issues concerning women in developing countries primarily of the French-speaking world. Discussion and research topics include matriarchal traditions and FGM in Africa, the Tunisian feminist movement, women, Islam, and tradition in the Middle East, women-centered power structures in India (Kerala, Pondicherry), and poverty and women in Vietnam, Laos, and Cambodia. Guest speakers and special projects are important elements of the course. Seminar-style format, taught in English, with significant disciplinary writing in English for WGST, ETHS, and some WLIT students, and writing in French for FRCH and WLIT students. Writing assignments include two shorter essays and a substantial research paper. Offered as ETHS 335, FRCH 335, WLIT 335, WGST 335, FRCH 435 and WLIT 435. Counts as SAGES Departmental Seminar.

WLIT 436. Elegiac Poetry. 3 Units.
In this course we shall translate and interpret selected elegies by Catullus, Tibullus, Propertius, and Ovid. We will also devote considerable class time to the reading and in-depth analysis of the major secondary literature, starting with the introductory pieces in the newest companions published by Brill and Cambridge, and moving on to fundamental articles and perhaps even a full scholarly monograph. Offered as LATN 356, LATN 456, WLIT 336, and WLIT 436.

WLIT 438. The Cameroon Experience. 3 Units.
Three-week immersion learning experience living and studying in Cameroon. The focus of the course is the culture, literature, and language of Francophone Cameroon, with some emphasis on Anglophone Cameroon. Students spend a minimum of fifteen hours per week visiting cultural sites and attending arranged courses at the University of Buea. Students will prepare a research paper. Coursework is in French. To do coursework in English, students should enroll in WLIT 338/438 or ETHS 338/438. Offered as ETHS 338, FRCH 338, WLIT 338, ETHS 438, FRCH 438, and WLIT 438.
WLIT 439. Latin American Poetic Revolt. 3 Units.
Introduction to most important poets in contemporary Latin America, a region home to a significant number of eminent poets, including Nobel Laureates from Chile, Gabriela Mistral and Pablo Neruda. The course focuses on detailed textual analysis of pivotal works, combined with historical-literary perspective, so students gain insight into the diverse styles and tendencies that reflect the tumultuous history of poetry's development in a relentless search for a Latin American cultural identity. Offered as SPAN 339, SPAN 439, WLIT 339 and WLIT 439.

WLIT 440. Seminar in Enlightenment Art and Literature: Piranesi and Vico. 3 Units.
This course explores aspects of the European eighteenth century as a transformative epoch in the history of western culture. Though the Enlightenment is usually associated especially with France, in this course we will focus on Italy, as the irresistible goal of travelers taking part in the "Grand Tour," and as a landscape of powerful ancient and modern architecture and artworks universally recognized as exemplary. In particular we will study one of the strangest and most fascinating visual artists of the period, the self-proclaimed architect Giovanni Battista Piranesi (1720-1778) famous no less now than in his own time for his fantastic prison engravings as well as his views of Rome, involving a radical rethinking of the city as a particular kind of inhabited as well as imagined space. Piranesi's polemical response to the advocates of the Greek revival, then coming into fashion, will lead into discussion of the key philosophical debates and aesthetic shifts of the time, notably the emergence of the notion of the sublime as a category eventually subversive of western ideals of rationality and still present -- and potent -- in our own culture. Finally we will place Piranesi within a current of discussion of the origins and nature of language and of human society in general, not least as manifested in architecture and other symbolic practices. The leading figure here is the Neapolitan G.B. Vico, whose New Science of 1725 remains one of the most stimulating texts in the western intellectual tradition. Offered as CLSC 340, COGS 340, WLIT 340, CLSC 440, and WLIT 440.

WLIT 441. Latin Prose Authors. 3 Units.
Reading and discussion of such prose authors as Cicero, Caesar, Livy or Pliny. Offered as LATN 201, LATN 401, WLIT 241 and WLIT 441.

WLIT 442. Latin American Feminist Voices. 3 Units.
Examination of the awakening of feminine and feminist consciousness in the literary production of Latin American women writers, particularly from the 1920s to the present. Close attention paid to the dominant themes of love and dependency; imagination as evasion; alienation and rebellion; sexuality and power; the search for identity and the self-preservation of subjectivity. Readings include prose, poetry, and dramatic texts of female Latin American writers contributing to the emerging of feminist ideologies and the mapping of feminist identities. Offered as SPAN 342, SPAN 442, ETHS 342, WGST 342, WLIT 342, and WLIT 442.

WLIT 443. The New Drama in Latin America. 3 Units.
Representative works of contemporary Latin American drama. Critical examination of selected dramatic works of twentieth-century Latin America provides students insight into the nature of drama and into the structural and stylistic strategies utilized by Latin American dramatists to create the "new theater," one which is closely related to Latin American political history. Offered as SPAN 343, SPAN 434, ETHS 343, WLIT 343 and WLIT 434.

WLIT 446. Survey of Latin Literature. 3 Units.
Reading and discussion of selections from the various genres of Latin literature of the Roman Republic and Empire such as historical narrative, lyric and elegiac poetry, comic drama, forensic rhetoric, philosophical dialogue, didactic literature, letters, and epigrams. Offered as LATN 306, LATN 406, WLIT 346, and WLIT 446.

WLIT 447. Livy. 3 Units.
Readings in Books I and XXI, with other selections from this major Augustan historian. Offered as LATN 307, LATN 407, WLIT 347, and WLIT 447.

WLIT 448. Horace: Odes and Epodes. 3 Units.
Readings and discussion of extensive selections from the poetry of Horace; consideration of Horace as exemplifying the spirit of the Augustan Age. Offered as LATN 308, LATN 408, WLIT 348, and WLIT 448.

WLIT 449. Medieval Latin. 3 Units.
Reading and interpretation of Latin texts from the Middle Ages. Material selected according to the needs and interests of students. Offered as LATN 309, LATN 409, WLIT 349, and WLIT 449.

WLIT 451. Latin Didactic Literature. 3 Units.
Readings from didactic poetry such as Lucretius and Vergil's Georgics. Parodies like Ovid's Ars Amatoria or prose treatises may also be introduced. Offered as LATN 351, LATN 451, WLIT 351, and WLIT 451.

WLIT 452. History. 3 Units.
Works of the Roman historian Cornelius Tacitus; his Annals I-XXI dealing with his portrait of Emperor Tiberius and the Empire after the death of Augustus. Offered as LATN 352, LATN 452, WLIT 352, and WLIT 452.

WLIT 454. Drama. 3 Units.
Reading of at least one play each by Plautus and Terence. Attention to the history of Latin and Greek New Comedy, and the contrasting styles of the two authors. Offered as LATN 354, LATN 454, WLIT 354, and WLIT 454.

WLIT 455. Afro-Hispanic Literature. 3 Units.
This course will survey the literary and cultural production of writers and artists of African descent in Latin America and the Caribbean, paying attention to both their creative and theoretical texts. Discussion of questions of race and ethnicity will allow students to explore the ways in which these texts reformulate the idea of national identity and cultural belonging in the context of the nation-state, whose traditional centrality is being weakened through the effects of migration and exile. Readings include works by writers from Cuba, Puerto Rico, Dominican Republic, Costa Rica, Colombia, Panama, Ecuador, and Peru. Offered as SPAN 356, SPAN 456, ETHS 356, WLIT 356 and WLIT 456.

WLIT 458. Latin American Cinema. 3 Units.
This course is designed to introduce students to the basic tools of film analysis as well as to the major trends and movements in Latin American cinema from the 1960s to the present. Through the analysis of representative films from Latin America, the course will examine the development of a variety of cinematic styles, paying particular attention to the historical contexts in which the films were produced and to the political, cultural, and aesthetic debates that surrounded their production. Offered as SPAN 358, SPAN 458, ETHS 358, WLIT 358 and WLIT 458.
WLIT 463H. African-American Literature. 3 Units.
A historical approach to African-American literature. Such writers as Wheatley, Equiano, Douglass, Jacobs, DuBois, Hurston, Hughes, Wright, Baldwin, Ellison, Morrison. Topics covered may include slave narratives, African-American autobiography, the Harlem Renaissance, the Black Aesthetic, literature of protest and assimilation. Maximum 6 credits. Offered as ENGL 363H, ETHS 363H, WLIT 363H, ENGL 463H, and WLIT 463H. Prereq: Graduate standing.

WLIT 465E. The Immigrant Experience. 3 Units.
Study of fictional and/or autobiographical narrative by authors whose families have experienced immigration to the U.S. Among the ethnic groups represented are Asian-American, Jewish-American, Hispanic-American. May include several ethnic groups or focus on a single one. Attention is paid to historical and social aspects of immigration and ethnicity. Maximum 6 credits. Offered as ENGL 365E, WLIT 365E, ENGL 465E, and WLIT 465E. Prereq: Graduate standing.

WLIT 465N. Topics in African-American Literature. 3 Units.
Selected topics and writers from nineteenth, twentieth, and twenty-first century African-American literature. May focus on a genre, a single author or a group of authors, a theme or themes. Maximum 6 credits. Offered as ENGL 365N, ETHS 365N, WLIT 365N, ENGL 465N, and WLIT 465N. Prereq: Graduate standing.

WLIT 465Q. Post-Colonial Literature. 3 Units.
Readings in national and regional literatures from former European colonies such as Australia and African countries. Maximum 6 credits. Offered as ENGL 365Q, ETHS 365Q, WLIT 365Q, ENGL 465Q, and WLIT 465Q. Prereq: Graduate standing.

WLIT 466G. Minority Literatures. 3 Units.
A course dealing with literature produced by ethnic and racial minority groups within the U.S. Individual offerings may include works from several groups studied comparatively, or focus on a single group, such as Native Americans, Chicanos/Chicanas, Asian-Americans, Caribbean-Americans. African-American works may also be included. May cover the entire history of the U.S. or shorter periods. Maximum 6 credits. Offered as ENGL 366G, WLIT 366G, ENGL 466G, and WLIT 466G. Prereq: Graduate standing.

WLIT 468. Topics in Film. 3 Units.
Individual topics in film, such as a particular national cinema, horror films, films of Alfred Hitchcock, images of women in film, film comedy, introduction to film genres, Asian-cinema and drama, dance on screen, science fiction films, storytelling and cinema, and literature and film. Maximum 15 credits. A student who has previously taken ENGL 368C may receive credit for ENGL 368 only if the themes/topics are different. Offered as ENGL 368, ENGL 468, WLIT 368, and WLIT 468. Prereq: Graduate standing.

WLIT 470. Greek Prose Composition. 3 Units.
This course introduces students to the principles and practice of composing continuous passages of Greek prose. It is designed to review and to strengthen students’ command of Attic forms while becoming more aware of the ways Greek syntax was employed to express thought. Via practice at writing Greek prose, the ultimate goal is for the students to become more proficient and sensitive readers of ancient Greek. Offered as GREK 370, GREK 470, WLIT 370 and WLIT 470.

WLIT 480. Latin Prose Composition. 3 Units.
This course is designed to strengthen students’ active command of Latin grammar and idiomatic prose style. At a basic level, students are trained to pay attention to details and thus write grammatically correct. Going beyond this, the course teaches Latin Idioms. Finally, it aims to develop students’ intuitive feeling for the Latin language. The ultimate goal is to write in a Ciceronian prose style. Offered as LATN 370, LATN 470, WLIT 380, and WLIT 480.

WLIT 485. Hispanic Literature in Translation. 3 Units.
Critical analysis and appreciation of representative literary masterpieces from Spain and Latin America, and by Hispanics living in the U.S. Texts cover a variety of genres and a range of literary periods, from works by Cervantes to those of Gabriel Garcia Marquez. The course will examine the relationship between literature and other forms of artistic production, as well as the development of the Hispanic literary text within the context of historical events and cultural production of the period. Counts toward Spanish major only as related course. No knowledge of Spanish required. Offered as ETHS 385, ETHS 485, SPAN 385, SPAN 485, WLIT 385, and WLIT 485. Prereq: Graduate standing.

WLIT 487. Literary and Critical Theory. 3 Units.
A survey of major schools and texts of literary and critical theory. May be historically or thematically organized. Maximum 6 credits. Offered as ENGL 387, WLIT 387, ENGL 487, and WLIT 487. Prereq: Graduate standing.

WLIT 490. Topics in World Literature. 3 Units.
In-depth examination of specific critical and literary theories and of their relevance for literature and culture studies. Authors, works and instructor may vary. Offered as WLIT 390 and WLIT 490. Prereq: Graduate standing.

WLIT 495. French Literature in Translation. 3 Units.
Topics vary according to student and faculty interest. May include Francophone literature, literature and cinema, women writers, contemporary literature. Counts toward French major only as related course. No knowledge of French required. Offered as FRCH 395, WLIT 395, FRCH 495, and WLIT 495. Prereq: Graduate standing.

WLIT 590. Seminar in World Literature. 3 Units.
Topics vary depending on student and instructor interests; may include Postcolonial literature; Latin American literature and film; African Anglophone and Francophone literature. Prereq: Graduate standing.

WLIT 595. Independent Research. 1 - 3 Unit.
For graduate students under special circumstances. Prereq: Graduate standing.

WLIT 601. Independent Study. 1 - 18 Unit.
For graduate students under special circumstances. Prereq: Graduate standing.

WLIT 651. Thesis MA. 1 - 18 Unit.
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