

2020-2021 CWRU COLLEGE OF ARTS AND SCIENCES BULLETIN

College of Arts and Sciences	2	Philosophy	292
Academic English Proficiency Program for International Graduate Students	4	Military Ethics Program	294
African and African American Studies	4	Physics	303
Anthropology	4	Political Science	323
Art History and Art	22	Post-baccalaureate Readiness Instruction for bioMedical Education (PRIME) Certificate Program	339
Asian Studies Program	46	Psychological Sciences	123
Astronomy	50	Public Policy Program	340
Biochemistry	55	Religious Studies	340
Biology	58	Social Justice Institute	356
Chemistry	89	Sociology	357
Childhood Studies Program	100	Teacher Licensure Program	369
Classics	102	Theater	372
Cognitive Science	115	Washington Study Program	383
Communication Sciences Program	123	Women's and Gender Studies Program	383
Computer Science	141	World Literature Program	390
Dance	141	Index	401
Earth, Environmental, and Planetary Sciences	145		
Economics	152		
English	153		
Environmental Studies Program	167		
Ethnic Studies Program	168		
Evolutionary Biology Program	177		
French and Francophone Studies Program	179		
Gerontological Studies Program	180		
History	182		
History and Philosophy of Science Program	204		
International Studies Program	205		
Japanese Studies Program	206		
Judaic Studies Program	210		
Mathematics, Applied Mathematics, and Statistics	212		
Mathematics and Physics Program	214		
Modern Languages and Literatures	234		
Music	257		
Natural Sciences Program	283		
Nutrition	284		
Origins Sciences Program	290		

COLLEGE OF ARTS AND SCIENCES

Case Western Reserve University's 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 191-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 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 35 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 Cleveland 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 Cleveland Play House, the Department of Theater has created one of the world'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.

Administration

Joy K. Ward, PhD
(Duke University)
Dean; Professor, Department of Biology

Stephen E. Haynesworth, PhD
(Case Western Reserve University)
Associate Dean; Associate Professor, Department of Biology

Kurt Koenigsberger, PhD
(Vanderbilt University)
Associate Dean; Associate Professor, Department of English

Lee Thompson, PhD
(University of Colorado, Boulder)
Associate Dean; Professor, Department of Psychological Sciences

Peter J. Whiting, PhD
(University of California, Berkeley)
Associate Dean; Professor, Department of Earth, Environmental, and Planetary 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://bakernord.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 interdisciplinary 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 Shafraan 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 (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 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.

HUMN (HUMN)

HUMN 101. Colloquium in the Humanities. 1 Unit.

A multi-disciplinary and interdisciplinary introduction to the humanities, which explores the multiple possibilities for working across disciplinary boundaries. The course will include meetings with faculty from across the humanities at the university. Colloquium meetings will consist of discussion of prepared readings; an introduction to Baker-Nord Center programs, including Humanities@Work; an introduction to the cultural institutions of University Circle and Cleveland; and meetings with visiting speakers. Course open only to Baker-Nord Scholars in the Humanities.

HUMN 201. The Public Humanities. 3 Units.

Public scholarship is a vital component of CWRU's mission to improve and enrich society through research that capitalizes on the power of collaboration. This course is designed to harness that power by bringing together students from across different humanities departments and by facilitating deep engagement through experiential learning. Throughout the semester, students will work individually and collaboratively towards projects that enhance the public humanities in greater Cleveland. In this collaborative classroom environment, students will combine their disciplinary expertise and personal interests with our course readings and seminar discussions. The first half of the semester focuses on theories and methods for cultivating the public humanities. The second half of the semester allows students to test and apply their knowledge by imagining how they would curate future programming in the public humanities.

HUMN 225. Cleveland, Humanities, Collaboration: Leadership. 1 Unit.

This course is a 1-credit experiential enrichment seminar that is open to all advanced undergraduate humanities majors. The course explores interdisciplinary leadership values and skills, with an emphasis on leadership at companies, nonprofits, and cultural institutions in greater Cleveland. Students will receive interdisciplinary peer feedback on their capstone research plans, and they will complete short writing assignments that align with and support their postgraduate plans (including for use in job interviews, graduate school applications, or professional portfolios). By the end of the course, students will be able to: - Evaluate and criticize advanced qualitative research across a wide spectrum of humanities disciplines - Present their capstone research and academic passions in a more engaging and public manner - Articulate how their coursework and extracurriculars have contributed to their post-baccalaureate aspirations - Work as a team to network, support, and refine their individual goals Prereq: Junior or Senior status and a declared Humanities major.

HUMN 422. Humanities Teaching Careers at Community Colleges. 0 Unit.

This course is designed to give CWRU graduate students in the humanities, arts, and humanistic social sciences an introduction to teaching careers at community colleges. Topics will include: student and faculty life; course design and assessment; online, hybrid, and dual-enrollment teaching; community engagement; and research, tenure, and career paths within community colleges.

IHSC (IHSC)

Course

IHSC 300. Synthesis of Premedical Concepts. 3 Units.

This course aims to hone skills necessary to synthesize and integrate knowledge across multiple subject areas, and to assist in preparing for health professional school admission, such as the MCAT. The course is team taught to include faculty expertise in biochemistry, biology, chemistry, English, mathematics, physics, psychological sciences and sociology. Critical analysis and reasoning skills will be emphasized. Completion of introductory courses in all subject areas above is strongly recommended before taking this course. MCAT materials from the AAMC (Association of American Medical Colleges) will be used to guide and enhance a student's ability to synthesize across many fields, and increase critical reasoning and analytical competencies.

Academic English Proficiency for International Graduate Students

717 Crawford Hall

www.case.edu/international/international-student-services/academic-english-program (<http://www.case.edu/international/international-student-services/academic-english-program/>)

Phone: 216.368.6994

Kurt Koenigsberger, Associate Dean

kurt.koenigsberger@case.edu

The Academic English Proficiency (AEP) Program for International Graduate Students provides English language development for students who need to raise their scores on the Test of English as a Foreign Language (TOEFL), International English Language Testing System (IELTS), or equivalent evaluation, for acceptance into a CWRU graduate degree program. The successful applicant gains provisional acceptance into a graduate program, with the provision being satisfied by their achievement of the necessary language score.

The program's English language and speech production curriculum comprises two modules, each module lasting one semester and consisting of three three-credit courses. Students enroll in one module (one semester) or two modules (two semesters) depending on their incoming language achievement score. AEP students also enroll each semester in a supplementary, non-credit-bearing workshop designed to assist students in engaging effectively at CWRU. (*Please note: the AEP program is not accepting applications at this time.*)

Department of Anthropology

238 Mather Memorial Building

www.case.edu/artsci/anth (<http://www.case.edu/artsci/anth/>)

Phone: 216.368.3703; Fax: 216.368.5334

Janet McGrath, Department Chair

janet.mcgrath@case.edu

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 the 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.

Department Faculty

Janet McGrath, PhD

(Northwestern University)

Professor and Chair; 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

Katia M. Almeida-Tracy, PhD

(Federal University of Rio Janeiro)

Senior Instructor

Cultural and social anthropology; cultures of Latin America and Brazil; linguistic anthropology; anthropology and higher education; globalization and human development; visual anthropology, art & aesthetics; contemporary youth cultures; Amazonian ethnology

Cynthia Beall, PhD

(Pennsylvania State University)

Distinguished University Professor and Sarah Idell Pyle Professor of Anthropology; Co-Director, Center for Research on Tibet; Member, National Academy of Sciences

Biological anthropology; adaptation to high-altitude hypoxia on the Andean, Tibetan, and East African plateau, genetics of human adaptation, 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, CWRU School of Medicine; Professor of Nursing, Frances Payne Bolton School of Nursing
Millennial medical 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)

Distinguished University Professor; John Reynolds Harkness Professor; Co-Director, Center for Research on Tibet; Professor of International Health, School of Medicine; Member, National Academy of Sciences

Sociocultural anthropology; global aging, population studies, pastoralism, modernization and nationalism, anthropology and history, Sino-Tibetan history; Tibet, China, Mongolia, Himalayas

Lawrence P. Greksa, PhD

(Pennsylvania State University)

Professor

Physical anthropology; human biology; growth and development; nutrition; demography; modernization; Polynesia; Andes; Old Order Amish

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; Senior Advisor, Schubert Center for Child Studies; Co-Director, Childhood Studies Program

Cultural, medical, and psychological anthropology; culture and human development; child maltreatment and child well-being; neighborhood and community; Urban U.S., Old Order Amish

Jim G. Shaffer, PhD

(University of Wisconsin, Madison)

Associate Professor

Archaeology; Middle East, Central Asia, Indus Valley, India

Lihong Shi, PhD

(Tulane University)

Associate Professor

Sociocultural anthropology; reproduction; gender and family relations; grief and healing; population aging and sex-ratio imbalance; China, East Asia

Adjunct Faculty

Nicole M. Burt, PhD

(University of Alberta, Edmonton)

Adjunct Assistant Professor; Curator and Head of Human Health and Evolutionary Medicine, Cleveland Museum of Natural History

Stable isotope biogeochemistry (diet and migration); chronic disease; human growth and development; forensics

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; NIH T32 Postdoctoral Research Fellow, School of Medicine

Cultural, medical, and psychological anthropology; refugees and asylum seekers; migration and health; culture and trauma; violence; families and youth; United States

Yohannes Haile-Selassie Ambaye, PhD

(University of California, Berkeley)

Adjunct Professor; Curator and Head of Physical Anthropology, Cleveland Museum of Natural History

Human evolution; Plio-Miocene mammalian evolution; Hominin paleoecology

David Kaawa-Mafigiri, PhD

(Case Western Reserve University)

Adjunct Assistant Professor; Associate Director, Center for Social Science Research on AIDS; Senior Lecturer, Department of Social Work and Social Administration, Makerere University (Uganda); Senior Research Fellow, Global Applied Research in Social, Economic, Health and Development (GARSEHD); Research Director, Equal Opportunities for Women and Children in Uganda Limited (EWOC)

Biomedical anthropology; Anthropology of infectious disease; Global health; social patterning of health; community health interventions; child abuse and neglect; health sciences and social work educational systems; East and Central Africa, Uganda

Brian G. Redmond, PhD

(Indiana University)

Adjunct Associate Professor; John Otis Hower Chair of Archaeology, Cleveland Museum of Natural History

Eastern North American prehistory; origins of maize agriculture and sedentism in lower Great Lakes; Paleoindian bone modification; museum archaeology

Richard Currie Smith, PhD

(University of Minnesota)

Adjunct Assistant Professor

Cultural ecology, anthropology and sustainability, semiotic/symbolic anthropology, medical semiotics; public health ecotourism; ecoadvertising; North American Prairie, Dakota (Sioux); modern Western culture

Secondary Faculty

Patricia A. Marshall, PhD

(University of Kentucky)

Professor, Department of Bioethics, School of Medicine

Empirical bioethics research; informed consent to research; ethics 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. Spilisbury, PhD

(Case Western Reserve University)

Associate Professor and Director, Academic Development Core, Department of Epidemiology and Biostatistics, Center for Clinical Investigation, CWRU School of Medicine

Cultural and medical anthropology; sleep, child maltreatment; United States

Visiting Faculty

Alanna Cooper, PhD

(Boston University)

Visiting Assistant Professor, Abba Hillel Silver Chair of Jewish Studies, Department of Religious Studies

Jewish Studies; Central Asia; history and memory; material culture

Emeriti

Charlotte Ikels, PhD

(University of Hawaii)

Professor Emerita

Cross-cultural aging, lifecourse, death and dying; intergenerational relationships; urban life; comparative bioethics; China

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

ANTH 102	Being Human: An Introduction to Social and Cultural Anthropology	3
ANTH 103	Introduction to Human Evolution	3
ANTH 319	Introduction to Statistical Analysis in the Social Sciences	3
One geographic area course, such as the courses listed here. Other courses must be approved by the Department.		3
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 349	Cultures of Latin America	
ANTH 353	Chinese Culture and Society	
Approved anthropology electives		18
Total Units		30

Medical Anthropology Concentration

ANTH 102	Being Human: An Introduction to Social and Cultural Anthropology	3
ANTH 103	Introduction to Human Evolution	3
ANTH 215	Health, Culture, and Disease: An Introduction to Medical Anthropology	3
ANTH 319	Introduction to Statistical Analysis in the Social Sciences	3
One geographic area course, such as the courses listed here. Other courses must be approved by the Department.		3
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 349	Cultures of Latin America	
ANTH 353	Chinese Culture and Society	
Three anthropology courses covering health/illness-related topics, such as the courses listed here. Other courses must be approved by the department.		9
ANTH 302	Darwinian Medicine	
ANTH 303	Interdisciplinary Solutions to Global Health Issues	
ANTH 306	The Anthropology of Childhood and the Family	
ANTH 316	Current Global Health Events	
ANTH 323	AIDS: Epidemiology, Biology, and Culture	
ANTH 326	Power, Illness, and Inequality: The Political Economy of Health	
ANTH 328	Medical Anthropology and Public Health	
ANTH 335	Illegal Drugs and Society	
ANTH 337	Comparative Medical Systems	
ANTH 338	Maternal Health: Anthropological Perspectives on Reproductive Practices and Health Policy	
ANTH 350	Culture, Science and Identity	
ANTH 359	Introduction to Global Health	
ANTH 360	Global Politics of Fertility, Family Planning, and Population Control	
ANTH 365	Gender and Sex Differences: Cross-cultural Perspective	
ANTH 366	Population Change: Problems and Solutions	
ANTH 371	Culture, Behavior, and Person: Psychological Anthropology	

ANTH 376	Topics in the Anthropology of Health and Medicine	
ANTH 378	Reproductive Health: An Evolutionary Perspective	
Approved anthropology electives		6
Total Units		30

Physical Anthropology Concentration

ANTH 102	Being Human: An Introduction to Social and Cultural Anthropology	3
ANTH 103	Introduction to Human Evolution	3
ANTH 319	Introduction to Statistical Analysis in the Social Sciences	3
One geographic area course, such as the courses listed here. Other courses must be approved by the Department.		3
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 349	Cultures of Latin America	
ANTH 353	Chinese Culture and Society	
Three physical anthropology courses, such as:		9
ANTH 302	Darwinian Medicine	
ANTH 320B	Field Methods and Field Work in Paleoanthropology	
ANTH 367	Topics in Evolutionary Biology	
ANTH 323	AIDS: Epidemiology, Biology, and Culture	
ANTH 355	Paleodiet(s)?: Understanding Food and Diet Past and Present	
ANTH 370	Field Seminar in Paleoanthropology	
ANTH/ANAT 375	Human Evolution: The Fossil Evidence	
ANTH/ANAT 377	Human Osteology	
ANTH 378	Reproductive Health: An Evolutionary Perspective	
ANTH 396	Undergraduate Research in Evolutionary Biology	
Approved anthropology electives		9
Total Units		30

Archaeology Concentration

ANTH 102	Being Human: An Introduction to Social and Cultural Anthropology	3
ANTH 103	Introduction to Human Evolution	3
ANTH 107	Archaeology: An Introduction	3
ANTH 319	Introduction to Statistical Analysis in the Social Sciences	3
One geographic area course, such as the courses listed here. Other courses must be approved by the Department.		3
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 349	Cultures of Latin America	
ANTH 353	Chinese Culture and Society	
Three approved archaeology courses, such as:		9
ANTH 202	Archaeology of Eastern North America	
ANTH 320A	Field Methods and Field Work in Archaeology	
ANTH 324	Field Methods in Archaeology	
ANTH 331	The Most Ancient Near East	
ANTH 333	Roots of Ancient India: Archaeology of South Asia	
ANTH 399	Independent Study (if approved by advisor)	
Approved anthropology electives		6
Total Units		30

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.

Certificate in Global Health

The Certificate in Global Health (<http://bulletin.case.edu/schoolofmedicine/generalmedicalsciences/#globalhealthcertificatetext>) is the centerpiece of the Framework for Global Health, a program made up of faculty members from across the Case Western Reserve University campus. Undergraduate and graduate anthropology students in the Certificate program will be grounded in global health issues by a core course (INTH 301 Fundamentals of Global Health) that introduces them to key concepts and vocabulary and facilitates communication across disciplines.

Requirements for the Certificate in Global Health:

INTH 301 Fundamentals of Global Health

ANTH 359 Introduction to Global Health

ANTH 215 Health, Culture, and Disease: An Introduction to Medical Anthropology

One approved elective

Integrated Graduate Studies

The Department of Anthropology participates in the Integrated Graduate Studies Program (<http://bulletin.case.edu/undergraduatelstudies/gradprofessional/#accelerationtowardgraduatedegreecontext>). 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

ANTH 102	Being Human: An Introduction to Social and Cultural Anthropology	3
ANTH 103	Introduction to Human Evolution	3
One geographic area course, such as the courses listed here. Other courses must be approved by the Department.		3
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 349	Cultures of Latin America	
ANTH 353	Chinese Culture and Society	
Approved electives		6
Total Units		15

Medical Anthropology Minor

ANTH 102	Being Human: An Introduction to Social and Cultural Anthropology	3
ANTH 103	Introduction to Human Evolution	3
ANTH 215	Health, Culture, and Disease: An Introduction to Medical Anthropology	3
One geographic area course, such as the courses listed here. Other courses must be approved by the Department.		3
ANTH 312	Ethnography of Southeast Asia	
ANTH 314	Cultures of the United States	
ANTH 331	The Most Ancient Near East	
ANTH 353	Chinese Culture and Society	
One anthropology course covering health/illness-related topics, such as the courses listed here. Other courses must be approved by the department.		3
ANTH 302	Darwinian Medicine	
ANTH 303	Interdisciplinary Solutions to Global Health Issues	
ANTH 306	The Anthropology of Childhood and the Family	
ANTH 316	Current Global Health Events	
ANTH 323	AIDS: Epidemiology, Biology, and Culture	
ANTH 326	Power, Illness, and Inequality: The Political Economy of Health	
ANTH 328	Medical Anthropology and Public Health	
ANTH 335	Illegal Drugs and Society	

ANTH 337	Comparative Medical Systems	
ANTH 338	Maternal Health: Anthropological Perspectives on Reproductive Practices and Health Policy	
ANTH 359	Introduction to Global Health	
ANTH 360	Global Politics of Fertility, Family Planning, and Population Control	
ANTH 365	Gender and Sex Differences: Cross-cultural Perspective	
ANTH 366	Population Change: Problems and Solutions	
ANTH 371	Culture, Behavior, and Person: Psychological Anthropology	
ANTH 376	Topics in the Anthropology of Health and Medicine	
ANTH 378	Reproductive Health: An Evolutionary Perspective	
Total Units		15

Physical Anthropology Minor

ANTH 102	Being Human: An Introduction to Social and Cultural Anthropology	3
ANTH 103	Introduction to Human Evolution	3
One geographic area course, such as the courses listed here. Other courses must be approved by the Department.		3
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 353	Chinese Culture and Society	
Two approved physical anthropology electives, such as:		6
ANTH 302	Darwinian Medicine	
ANTH 320B	Field Methods and Field Work in Paleoanthropology	
ANTH 323	AIDS: Epidemiology, Biology, and Culture	
ANTH 355	Paleodiet(s)? Understanding Food and Diet Past and Present	
ANAT/ANTH 375	Human Evolution: The Fossil Evidence	
ANAT 377	Human Osteology	
ANTH 378	Reproductive Health: An Evolutionary Perspective	
ANTH 396	Undergraduate Research in Evolutionary Biology	
Total Units		15

Archaeology Minor

ANTH 102	Being Human: An Introduction to Social and Cultural Anthropology	3
ANTH 103	Introduction to Human Evolution	3
ANTH 107	Archaeology: An Introduction	3
One geographic area course, such as the courses listed here. Other courses must be approved by the Department.		3

ANTH 312	Ethnography of Southeast Asia	
ANTH 314	Cultures of the United States	
ANTH 202	Archaeology of Eastern North America	
ANTH 331	The Most Ancient Near East	
ANTH 353	Chinese Culture and Society	
One approved archaeology course, such as:		3
ANTH 202	Archaeology of Eastern North America	
ANTH 320A	Field Methods and Field Work in Archaeology	
ANTH 324	Field Methods in Archaeology	
ANTH 331	The Most Ancient Near East	
ANTH 333	Roots of Ancient India: Archaeology of South Asia	
ANTH 399	Independent Study (if approved by advisor)	
Total Units		15

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.

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

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

Master of Arts

The 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.

The MA program is designed for two groups of students. First, students who wish to obtain a PhD but enter the program with only a BA, must obtain the MA before being admitted to the PhD program. This is accomplished in three semesters. Second, for those students who wish to obtain an MA only, it is possible to meet degree requirements in one year (two semesters). This program is designed for students who plan careers in other fields, including the allied health professions. These students may not enter the PhD program directly, although they may choose to apply.

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 30 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 the comprehensive written examination before the completion of 30 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. It requires a minimum of 36 credit hours.

PhD students 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.

Students are encouraged to obtain a Certificate in Global Health (<http://bulletin.case.edu/schoolofmedicine/generalmedicalsciences/#globalhealthcertificatetext>) during their studies. The Certificate in Global Health is described below.

MA Requirements

The curriculum covers the range of medical anthropology interests: ethnomedicine, international and global health, psychiatric anthropology, human adaptation and disease, nutrition, and so on. All Master of Arts degree students in medical anthropology must complete 30 hours:

ANTH 439	Ethnographic and Qualitative Research Methods	3
ANTH 462	Contemporary Theory in Anthropology	3
ANTH 480	Medical Anthropology and Global Health I	3
ANTH 481	Medical Anthropology and Global Health II	3
Approved statistics course		3
Approved anthropology electives *		15
Total Units		30

* 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 Tutorial: Advanced Studies in Anthropology do not count towards this requirement.
- Students may not take more than six total credit hours of ANTH 599.
- Students must take 18 credit hours in dissertation (ANTH 701 Dissertation Ph.D.) after completing a candidacy examination.

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.

Certificate in Global Health (<http://bulletin.case.edu/schoolofmedicine/generalmedicalsciences/#globalhealthcertificatetext>)

The Certificate in Global Health is the centerpiece of the Framework for Global Health, a program made up of faculty members from across the Case Western Reserve University campus. Anthropology students in the Certificate program will be grounded in global health issues by a core course (**INTH 301** Fundamentals of Global Health) that introduces them to key concepts and vocabulary and facilitates communication across disciplines. The Certificate in Global Health is available to anthropology graduate students at both the MA and PhD levels.

Requirements for the Certificate in Global Health:

INTH 401 Fundamentals of Global Health

ANTH 459 Introduction to Global Health

ANTH 480 Medical Anthropology and Global Health I Medical Anthropology and Global Health

One approved elective

Dual-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 is especially valuable to students interested in working in global or international health, or within health policy programs. By allowing for cross-counting of course credits, the dual degree MA/MPH program can be completed by taking 63 credit hours (24 in anthropology and 39 in public health). The dual degree PhD/MPH requires an additional 18 credit hours in anthropology beyond the MA level and 18 hours of ANTH 701 Dissertation Ph.D. All dual-degree students 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 dual MA or PhD/MD program are to train unusually qualified and motivated 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.

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. Counts for CAS Global & Cultural Diversity Requirement.

ANTH 300. Global Health Design in Uganda. 1 - 3 Units.

The CWRU Anthropology-Engineering Collaborative (AEC) offers this unique course applying social science and engineering skills and expertise to address global health issues in Uganda. The AEC is part of a longstanding collaboration between CWRU and Makerere University in Kampala, Uganda. Students collaborate with students at Makerere University in Kampala, Uganda and the CWRU student group, Global Health Design Collaborative (GHDC), to design and implement solutions to specific health issues in Luwero, Uganda. Students meet weekly during the semester to learn about global health technology design and anthropology. Students work with GHDC and program faculty on specific projects; activities may include conducting needs assessment, prototype development, design validation and verification, and preparation of a project report. Current projects focus on designing a pediatric pulse oximeter; identifying means to preserve the cold chain for vaccine outreach and improving medical waste disposal. In Uganda, students and their Makerere University counterparts travel together to Luwero district where they visit health centers to collaborate with local staff to review current design prototypes and issues. Activities include: talking to health center staff at different levels of the health care system, observing a community health outreach, and meeting with diverse stakeholders in Luwero and Kampala. Students gain hands-on experience in engineering design, social science methods, and working in transnational, interdisciplinary teams and contribute directly to ongoing efforts to address global health issues in Uganda. Students are encouraged to contribute to the projects through ongoing work with GHDC. The course may be taken as either ENGR 350U or ANTH 300. The course fee covers travel and on-the-ground expenses. The class is open to all majors but enrollment is by application and instructors' consent. Students who enroll in 3 credits may count the class for the CSE humanities/social science requirement and/or the CAS Global and Cultural Diversity requirement. Offered as ENGR 350U and ANTH 300.

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 303. Interdisciplinary Solutions to Global Health Issues. 3 Units.

This unique course brings together the expertise of engineers and social scientists to address global health issues through a combination of classroom-based learning and experiential learning through team-based design projects and field-based community assessments. Students will experience the process of engineering design by participating in teams organized around solutions to real-world health problems in the developing world. Methods from social sciences will be practiced and brought to bear in the process, including assessment of global health needs, and evaluation of success of interventions. Students will study and discuss current key issues in global health, and ethics surrounding health care, disparity, methods of intervention, and develop skills in how to define and frame problems and communicate effectively across disciplines. The course is organized around ongoing projects that seek to design technical solutions to global health issues, with a focus on Uganda. The teams will also work and learn with students and faculty of Biomedical Engineering and Social Sciences at Makerere University of Kampala (MUK), Uganda. Examples of interactions with MUK will include discussion of common readings, peer-review, and joint planning, implementation, and review of fieldwork. Students enrolled in ANTH 303/ ENGR 397 are eligible to travel to Uganda to participate in project activities over Spring Break. Travelers must be enrolled in ENGR 350U. This course is an approved SAGES Departmental Seminar. A student in the Case School of Engineering may use this course to meet an Engineering Core Breadth requirement, either in place of ENGL 398 and ENGR 398, or as a Social Science course (ANTH 303 cross-list). No student may count the course to satisfy both of these requirements. Offered as ANTH 303 and ENGR 397. Counts as SAGES Departmental Seminar. Counts for CAS Global & Cultural Diversity Requirement.

ANTH 305. Public Policy in Child Development. 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 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 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. Counts for CAS Global & Cultural Diversity Requirement.

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 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 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 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, STAT 201R, or PSCL 282. Counts for CAS Quantitative Reasoning Requirement. Prereq: Major in Anthropology.

ANTH 320A. Field Methods and Field Work in Archaeology. 3 - 6 Units.

This course is intended to provide a home for archaeology field courses taken at other institutions. It can be used for courses which provide students with a comprehensive introduction to archaeological field work, including classroom and practical training in archaeological methods, laboratory experience in dealing with artifacts, and instruction in the relevant cultural context.

ANTH 320B. Field Methods and Field Work in Paleoanthropology. 3 - 6 Units.

This course is intended to provide a home for paleoanthropology field courses taken at other institutions. It can be used for courses which provide students with a comprehensive introduction to paleoanthropological field work, including classroom and practical training in paleoanthropological methods, laboratory experience in dealing with fossils and artifacts, and instruction in the relevant species.

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. 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 325. Economic Anthropology. 3 Units.

Economic anthropology is a sub-field of anthropology that examines how people in modern and non-modern societies produce, distribute, exchange, and consume goods, services, and other valued resources. The sub-field seeks to understand how cultures, including our own, organize and structure these activities through institutions, rituals, and beliefs systems. However, unlike the formal approach of the field of economics, the in-depth methods of economic anthropology concentrate on day-to-day experiences of what the economic means, how this is defined, and what we can learn about human behavior through it. This course will introduce students to economic anthropology and some of the major questions and challenges this field addresses. The history of this sub-field, how it relates to economic sociology, and areas where economic anthropology and traditional economics overlap, will also be explored. This class does not present economic anthropology and modern economics as adversaries, instead how and why they are fundamentally different orientations with often seemingly little in common. On this backdrop, this class will survey a number of different topics, including: health commodification; gift exchange; commodity chains; the history of money and debt; why objects have value; how people make ends meet; rational vs. non-rational decision-making; behavioral economic experiments conducted in other cultures; development economics, and why some objects and services have prices while others do not. Offered as ANTH 325 and ANTH 425.

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 329. Anthropological Perspectives of Migration and Health. 3 Units.

This course provides an overview of anthropological perspectives on transnational migration and health. We will focus particularly on health and health care issues concerning refugees, asylum seekers and undocumented migrants. This course will focus on the following topics: the physical and mental health consequences of forced migration; refugee trauma; the intersection of health care and immigration policies; immigration and health care access and utilization. Readings and coursework will consider the sociocultural, political, and economic factors that contribute to migrant health disparities. We will also address issues of medical pluralism among transnational migrants and critically examine the concept of cultural competence in clinical settings. Class readings will comprise a variety of theoretical and ethnographic literature within anthropology and closely related disciplines, drawing on cases from across the globe and in cross-cultural comparison. The class will use lectures, readings, and class discussions to explore these relevant issues in migration and health, with the opportunity to engage in hands on ethnographic work with refugees locally. Offered as ANTH 329 and ANTH 429.

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 337. Comparative Medical Systems. 3 Units.

This course considers the world's major medical systems. Foci include professional and folk medical systems of Asia and South Asia, North and South America, Europe and the Mediterranean, including the Christian and Islamic medical traditions. Attention is paid to medical origins and the relationship of popular to professional medicines. The examination of each medical tradition includes consideration of its psychological medicine and system of medical ethics. Recommended preparation: ANTH 215. Offered as ANTH 337 and ANTH 437.

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 340. Cultures of the World: Study Abroad. 3 Units.

ANTH 340 is a vehicle to allow anthropology courses taken during study abroad that have a primary focus on the culture of a specific society or geographic area to be accepted as equivalent to a CWRU course that meets the CAS Global and Cultural Diversity requirement. In order to be accepted as equivalent to ANTH 340 a course must (a) be taught in a department of anthropology or by an anthropologist in an allied department; and (b) cover the breadth of a culture. Courses focusing on one aspect of a society (economics, political structure, history, etc.) cannot be accepted as equivalent to ANTH 340. In order to verify that a course meets these requirements students must submit a course description and syllabus for the course to the Chair, Department of Anthropology. If a syllabus is not available in advance of the course, approval will be contingent on review of the course syllabus. This course will fulfill the CAS Global and Cultural Diversity requirement, as well as meet the geographic area requirement for Anthropology majors and minors. Counts for CAS Global & Cultural Diversity Requirement.

ANTH 344. Archaeology of the Ancient Mediterranean. 3 Units.

This course examines the ancient Mediterranean through the material cultures of Egypt, Greece and Rome. Each of these great civilizations will be individually explored, but also examined within a broader historical context. Particular focus will be placed on the social, political and economic ideas that were exchanged across the Mediterranean Sea and the influence this interconnectivity had on eastern Mediterranean societies. Offered as ANEE 344, ANEE 444, ANTH 344, ANTH 444, CLSC 344 and CLSC 444.

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. Counts for CAS Global & Cultural Diversity Requirement. 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 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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

ANTH 355. Paleodiet(s)?: Understanding Food and Diet Past and Present. 3 Units.

The Paleodiet promotes to the public the notion that humans evolved to eat one single diet; that is far from the truth. In this class, we will learn about the evolution of our diets and nutrition, the diversity of human diets over time and space, the relationship of diet to health, and the methods biological anthropologists use to scientifically study diet. Expect to learn about early human diets right up to modern diets. Additionally, this course will focus on how to read and interpret scientific papers/concepts, as well as how to construct a scientific argument. Students will apply those skills by giving a presentation to classmates following the structure of scientific meetings. Offered as ANTH 355 and ANTH 455. Prereq: ANTH 103.

ANTH 359. Introduction to Global Health. 3 Units.

This course is an introduction to the field of international and global health from the perspective of anthropology. Key health problems in the world are identified and anthropological research on these issues is presented and examined. The course covers current international and global health issues and reviews the history of anthropological engagement in the field. Case studies of current health issues will be discussed. 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. 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: ANTH 225 or equivalent.

ANTH 369D. The Anthropology of Nutrition. 3 Units.

Human nutrition is examined from an anthropological perspective. We will briefly cover methods for assessing and evaluating dietary intake and dietary patterns. The remainder of the course will focus on various social, ecological, and genetic factors which influence human nutritional patterns and the causes and consequences of protein-energy malnutrition. The course will be taught in a seminar format and is designed to enhance your skills in critically reading the anthropological literature and in improving your written and oral communication skills. A student may not receive credit for both ANTH 369 and ANTH 369D. Recommended preparation: ANTH 102, ANTH 103. Counts as SAGES Departmental Seminar.

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 hominid 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 Units.

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 Units.

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 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 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. 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 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, 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.

ANTH 399. Independent Study. 1 - 6 Units.

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 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 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. Counts for CAS Global & Cultural Diversity Requirement.

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 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. Offered as ANTH 323 and ANTH 423.

ANTH 425. Economic Anthropology. 3 Units.

Economic anthropology is a sub-field of anthropology that examines how people in modern and non-modern societies produce, distribute, exchange, and consume goods, services, and other valued resources. The sub-field seeks to understand how cultures, including our own, organize and structure these activities through institutions, rituals, and beliefs systems. However, unlike the formal approach of the field of economics, the in-depth methods of economic anthropology concentrate on day-to-day experiences of what the economic means, how this is defined, and what we can learn about human behavior through it. This course will introduce students to economic anthropology and some of the major questions and challenges this field addresses. The history of this sub-field, how it relates to economic sociology, and areas where economic anthropology and traditional economics overlap, will also be explored. This class does not present economic anthropology and modern economics as adversaries, instead how and why they are fundamentally different orientations with often seemingly little in common. On this backdrop, this class will survey a number of different topics, including: health commodification; gift exchange; commodity chains; the history of money and debt; why objects have value; how people make ends meet; rational vs. non-rational decision-making; behavioral economic experiments conducted in other cultures; development economics, and why some objects and services have prices while others do not. Offered as ANTH 325 and ANTH 425.

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 429. Anthropological Perspectives of Migration and Health. 3 Units.

This course provides an overview of anthropological perspectives on transnational migration and health. We will focus particularly on health and health care issues concerning refugees, asylum seekers and undocumented migrants. This course will focus on the following topics: the physical and mental health consequences of forced migration; refugee trauma; the intersection of health care and immigration policies; immigration and health care access and utilization. Readings and coursework will consider the sociocultural, political, and economic factors that contribute to migrant health disparities. We will also address issues of medical pluralism among transnational migrants and critically examine the concept of cultural competence in clinical settings. Class readings will comprise a variety of theoretical and ethnographic literature within anthropology and closely related disciplines, drawing on cases from across the globe and in cross-cultural comparison. The class will use lectures, readings, and class discussions to explore these relevant issues in migration and health, with the opportunity to engage in hands on ethnographic work with refugees locally. Offered as ANTH 329 and ANTH 429.

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 437. Comparative Medical Systems. 3 Units.

This course considers the world's major medical systems. Foci include professional and folk medical systems of Asia and South Asia, North and South America, Europe and the Mediterranean, including the Christian and Islamic medical traditions. Attention is paid to medical origins and the relationship of popular to professional medicines. The examination of each medical tradition includes consideration of its psychological medicine and system of medical ethics. Recommended preparation: ANTH 215. Offered as ANTH 337 and ANTH 437.

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 439B. Applying Anthropological Research Methods. 1 Unit.

This class will provide students with practical experience utilizing the anthropological research methods taught in ANTH 439, Ethnographic and Qualitative Research Methods. With guidance from the instructor, students will plan and implement a preliminary / pilot research project. Prereq: ANTH 439 and Graduate Standing in Anthropology.

ANTH 444. Archaeology of the Ancient Mediterranean. 3 Units.

This course examines the ancient Mediterranean through the material cultures of Egypt, Greece and Rome. Each of these great civilizations will be individually explored, but also examined within a broader historical context. Particular focus will be placed on the social, political and economic ideas that were exchanged across the Mediterranean Sea and the influence this interconnectivity had on eastern Mediterranean societies. Offered as ANEE 344, ANEE 444, ANTH 344, ANTH 444, CLSC 344 and CLSC 444.

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. Counts for CAS Global & Cultural Diversity Requirement.

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 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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement. Prereq: Graduate Standing.

ANTH 455. Paleodiet(s)?: Understanding Food and Diet Past and Present. 3 Units.

The Paleodiet promotes to the public the notion that humans evolved to eat one single diet; that is far from the truth. In this class, we will learn about the evolution of our diets and nutrition, the diversity of human diets over time and space, the relationship of diet to health, and the methods biological anthropologists use to scientifically study diet. Expect to learn about early human diets right up to modern diets. Additionally, this course will focus on how to read and interpret scientific papers/concepts, as well as how to construct a scientific argument. Students will apply those skills by giving a presentation to classmates following the structure of scientific meetings. Offered as ANTH 355 and ANTH 455.

ANTH 459. Introduction to Global Health. 3 Units.

This course is an introduction to the field of international and global health from the perspective of anthropology. Key health problems in the world are identified and anthropological research on these issues is presented and examined. The course covers current international and global health issues and reviews the history of anthropological engagement in the field. Case studies of current health issues will be discussed. 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 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.

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, RLG 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 hominid 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 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 480B. Medical Anthropology and Global Health I Recitation. 1 Unit.

ANTH 480B serves as a complement to ANTH 480 (Medical Anthropology and Global Health I). There are two primary goals. The first goal is to provide additional time to review, discuss, and integrate through discussion and additional readings topics covered in ANTH 480. This will better prepare students for both course exams and the MA Qualifying Exam, as well as meeting stated student interests in expanded opportunities to engage with graduate student colleagues about contemporary anthropological research. The second goal is to support students in building their professional identity as anthropologists and to enhance professional development through specific skill-building. Coreq: ANTH 480. Prereq: Anthropology Graduate Student.

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 481B. Medical Anthropology and Global Health II Recitation. 1 Unit.

ANTH 481B serves as a complement to ANTH 481 (Medical Anthropology and Global Health II). The goal of the course is to provide additional time to review, discuss, and integrate through discussion and additional readings topics covered in ANTH 481. This will better prepare students for both course exams and the MA Qualifying Exam, as well as meeting stated student interests in expanded opportunities to engage with graduate student colleagues about contemporary anthropological research. 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 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 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 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 512A. Sem in Anth & Aging. 3 Units.**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.**ANTH 599. Tutorial: Advanced Studies in Anthropology. 1 - 18 Units.**

(Credit as arranged.) Advanced studies in anthropology.

ANTH 601. Independent Research. 1 - 18 Units.

(Credit as arranged.)

ANTH 701. Dissertation Ph.D.. 1 - 9 Units.

(Credit as arranged.) Prereq: Predoctoral research consent or advanced to Ph.D. candidacy milestone.

Department of Art History and Art

Mather House

arthistory.case.edu/ (<http://arthistory.case.edu/>)

Phone: 216.368.4118 or 368.4039; Fax: 216.368.4681

Elizabeth Bolman, Department Chair

elizabeth.bolman@case.edu

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 planned Nancy and Joseph Keithley Institute for Art History, to be 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

The study of art history expands visual literacy, deepens critical reading and writing skills, and increases students' abilities to think across fields. The discipline is profoundly multidisciplinary, and enhances awareness of cultural diversity around the globe, throughout time. 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. Increasingly, familiarity with global visual culture is desirable for those pursuing careers well outside the field (for example, engineering students).

The graduate programs in art history are offered as part of the exceptional 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 and conservation laboratories.

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 school that educates artists and designers. Students participate in educational field experiences conducted in many of Greater Cleveland's urban and suburban school systems, museums, and cultural institutions. 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.

Art Studio Program

For students seeking to develop and nurture their artistic and creative talents, the Art Studio Program offers a variety of introductory 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/teachers. These courses can be taken as university electives or to fulfill minors in art studio, photography, or architecture. 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 to complete a second major in pre-architecture. At the end of each semester, there is a comprehensive public art exhibition of student work in the Art Gallery.

Department Faculty

Elizabeth Bolman, PhD
(Bryn Mawr)
Elsie B. Smith Chair in the Liberal Arts; Professor of Art History; Chair, Department of Art History and Art
Late Antique and Byzantine art

Henry Adams, PhD
(Yale University)
Ruth Coulter Heede Professor in Art History
American art

Erin Benay, PhD
(Rutgers University)
Associate Professor
Early Modern Southern European art

Elina Gertsman, PhD
(Boston University)
Archbishop Paul J. Hallinan Professor in Catholic Studies II; Director of Graduate Studies
Medieval art

Eunyoung Park, PhD
(University of Kansas)
Assistant Professor
Modern and contemporary art

Maggie L. Popkin, PhD
(The Institute of Fine Arts, New York University)
Robson Junior Professor; Associate Professor
Ancient Roman art and archaeology

Andrea Wolk Rager, PhD
(Yale University)
Jesse Hauk Shera Assistant Professor; Director of Undergraduate Studies
Nineteenth- and twentieth-century British and European art

Catherine B. Scallen, PhD
(Princeton University)
Andrew W. Mellon Professor of the Humanities; Associate Professor
Northern Renaissance and Baroque art and historiography

Adjunct Faculty from the Cleveland Museum of Art

Louis Adrean, MLS
(Syracuse University)
Adjunct Instructor; Head, Research and Programs, Ingalls Library and Museum Archives

Susan Bergh, PhD
(Columbia University)
Adjunct Associate Professor; Curator, Art of the Ancient Americas

Cory Korkow, PhD
(University of Virginia)
Adjunct Associate Professor; Associate Curator, European Art

Heather Lemonedes, PhD
(The Graduate School and University Center, City University of New York)
Adjunct Associate Professor; Deputy Director and Chief Curator

Sonya Rhie Mace, PhD
(Harvard University)
Adjunct Professor; George P. Bickford Curator of Indian and Southeast Asian Art

Sooa Im McCormick, PhD
(University of Kansas)
Adjunct Assistant Professor; Assistant Curator, Korean Art

Emily Peters, PhD
(University of California, Santa Barbara)
Adjunct Professor; Curator, Prints and Drawings

William Robinson, PhD
(Case Western Reserve University)
Adjunct Professor; Curator, Modern European Art

Barbara Tannenbaum, PhD
(University of Michigan)
Adjunct Professor; Curator, Photography

Sinead Vilbar, PhD
(Princeton University)
Adjunct Professor, Curator, Japanese and Korean Art

Art Education

Tim Shuckerow, MA
(Case Western Reserve University)
Director, Art Education and Art Studio Program
Art education, painting, ceramics

Steven Ciampaglia, EdD
(Northern Illinois University)
Champney Family Professor of Art; Associate Professor
Social justice and community arts; critical pedagogy; art + tech; media arts education

David King, MFA
(Kent State University)
Lecturer; Supervisor, Art Education Secondary Student Teaching

Adjunct Art History 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)
Adjunct Assistant Professor
Physical examination of works of art

Gary Sampson, PhD
(University of California, Santa Barbara)
Associate Dean, Graduate Studies, Cleveland Institute of Art
History of photography

Holly Witchev, 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
Art Education, Painting, Ceramics

Jerry Birchfield, MFA
(Cornell University)
Lecturer, Photography Advisor
Photography, creative photography

Margaret Fischer, MA
(Case Western Reserve University)
Lecturer
Enameling and jewelry

Adriel Meyer, MA
(Case Western Reserve University)
Lecturer
Fibers and textiles

George Kozmon, BFA
(Cleveland Institute of Art)
Lecturer
Design

Sally Levine, MA
(University of Illinois)
Lecturer
Architecture

Martha Lois, MFA
(Kent State University)
Lecturer
Ceramics

Barney Taxel, BA
(Case Western Reserve University)
Lecturer
Digital photography

Emeriti

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

Edward J. Olszewski
Professor Emeritus

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 are essential components 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/#accelerationtowardgraduatedegree>). 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:

ARTH 101	Art History I: Pyramids to Pagodas	3
ARTH 102	Art History II: Michelangelo to Maya Lin	3
Art History 200-level courses		3-6
ARTH 396	Majors Seminar	3
Art History electives at the 300 level		15-18
Art Studio courses		3-6

Students must take one 200- or 300-level course in four of the following five areas: Ancient Art, Arts of Asia/Africa/the Americas, Medieval Art, Renaissance and Baroque Art, and Modern/American/Contemporary Art. 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 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 University and submission of an art portfolio. 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

SAGES (First Seminar)	4
Two of the following:	6
USNA Thinking About Natural and Technological World (3 cr hrs)	
USSO Thinking about the Social World (3 cr hrs)	
USSY Thinking about the Symbolic World (3 cr hrs)	

Natural Sciences	3	
Quantitative Reasoning (MATH or STAT)	3	
Global & Cultural Diversity	3	
ARTH 101	Art History I: Pyramids to Pagodas	3
ARTH 102	Art History II: Michelangelo to Maya Lin	3
ARTH Electives (one must be at 300 level)		6
PHED Physical Education (2 semesters)		
Total Units		31

Professional Education/Art Education

ARTS 295	Introduction to Art Education	3
ARTS 300	Current Issues in Art Education	3
ARTS 385	Clinical/Field Based Experience I	1
ARTS 386	Clinical/Field Based Experience II	1
ARTS 387	Clinical/Field Based Experience III	1
ARTS 393	Art Content, Pedagogy, Methodology, and Assessment	3
ARTS 366A	Student Teaching in Art: Pre-K - 6th Grade	4
ARTS 366B	Student Teaching in Art: 7th - 12th Grade	4
ARTS 465	Seminar for Art Teachers	4
EDUC 301	Introduction to Education	3
PSCL 101	General Psychology I	3
EDUC 304	Educational Psychology	3
EDUC 255	Literacy Across the Content Areas	3
EDUC 386	Introduction to Instructional Technology	3
Total Units		39

Art Studio Courses at the Cleveland Institute of Art

I. Cleveland Institute of Art Foundations Core

Foundations Core introduces you to the forms, methods, and media concepts crucial to creative development, self-expression, and effective visual communication and production. The program provides a solid, broad-based core of art fundamentals that supports each subsequent year of advanced study throughout the institute's curriculum. The foundation experience fosters a learning environment that is responsive to the aspirations and needs of the young artist, as well as innovations in the world of art and design, by balancing fundamental approaches with experimentation. The program fosters students' aesthetic sensibilities and prepares them for the visual language, concepts, discipline, and skills that are necessary for excelling as an artist and art educator.

REQUIRED CLASSES

CIAR 103D Digital Color	1.5
CIAR 103M Material Color	1.5
CIAR 104 Digital Synthesis	3
CIAR 107 2D Design	3
CIAR 108 3D Design	3
CIAR 117 Drawing I	3
CIAR 118 Drawing II	3
CIAR 221 Intro to Painting	3

CIAR 233 Painting After the Photograph	3
CIAR 229A Intro to Sculpture Fabrication	3
Two Foundation Electives (6 cr. hrs)	6
Total Units	33

CLEVELAND INSTITUTE OF ART & ART STUDIO ELECTIVES (7 classes, 21 hours) 21

Seven different Art Studio 3-credit courses may be selected as electives in the areas of drawing, painting, design, sculpture, printmaking, crafts (ceramics, enameling, glass, fiber and materials studies, jewelry and metals), technology and integrated media, and film and video photographic arts. These courses offer students an opportunity for both breadth and depth based on their artistic aspirations and interests.

Recommended Classes

CIAR PRI 200 Printmaking or PRI 232 Artist Book
CIAR CDE Creative Process & Materials or CWRU ARTS 214 Ceramics
CWRU ARTS 216 Painting
CIAR PHV 295 Photo I or CWRU ARTS 220 Photo I
CIAR MET 249 Intro to Jewelry or CWRU ARTS 210 Enameling & Jewelry
CIAR PPEL 400 Putting Artists in the Classroom
CIAR Advanced Drawing or Painting Course

Total Units
124

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 1: Entry 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. Successful interview and satisfactory score on the *Teacher Licensure Admission Assessment*
2. Cumulative GPA at CWRU of 2.7 or better (undergraduate)
3. Demonstration of entry-level competency in the discipline through successful presentation of an art portfolio
4. Signed statement of *Good Moral Character*
5. Being accepted as an art major through a portfolio review before matriculation
6. Successful completion of ARTS 295 Introduction to Art Education, including evaluation of an initial Teaching ePortfolio

Decision Point 2: Admission to 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. Cumulative GPA of 2.7 or better
2. Discipline GPA of 2.7 or better
3. Education GPA of 3.0 or better
4. Minimum average score of 2.0 on *Candidate Disposition Assessment Inventory (DAI)*
5. Minimum average score of 2.0 on the ePortfolio

Decision Point 3: Admission to Student Teaching

The Application for Student Teaching should be completed by week 8 of the semester prior to student teaching. The application requires:

1. Cumulative GPA of 2.7 or better
2. Discipline GPA of 2.7 or better
3. Education GPA of 3.0 or better
4. Minimum average score of 2.5 on the ePortfolio that includes documentation of clinical/field experiences
5. Pass TB test; present documentation of hepatitis B vaccinations
6. Pass criminal background checks (BCI & FBI)
7. Minimum average score of 2.5 on *DAI*
8. Successful completion of the *Student Teaching Interview*

Decision Point 4: Retention During the Student Teaching Semester

1. Minimum average score of 2.75 on each *CWRU Student Teaching Final Assessment* by Cooperating Teacher and University Supervisor during the **first student teaching placement**
2. Minimum average **mid-semester** score of 2.75 on *DAI*

Decision Point 5: Recommendation for Initial Licensure

1. Cumulative GPA of 2.7 or better
2. Discipline GPA of 2.7 or better
3. Education GPA of 3.0 or better
4. Completion of degree requirements
5. Minimum average score of 3.0 on the ePortfolio
6. Minimum average score of 3.0 or better on *DAI*
7. Completion of *CWRU Student Teaching Final Assessment* by Cooperating Teacher and University Supervisor averaging 3.0 or better on each
8. Achieve passing scores on Ohio licensure exams
9. Completion of the following: *Feedback on University Supervisor, Feedback on Cooperating Teacher, CWRU 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 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:

ARTH 101	Art History I: Pyramids to Pagodas	3
ARTH 102	Art History II: Michelangelo to Maya Lin	3
ARTS 106	Creative Drawing I	3
ARTS 302	Architecture and City Design I	3
ARTS 303	Architecture and City Design II	3
Art history courses		6
Two of the following:		6
ARTS 101	Design and Color I	
ARTS 201	Design and Color II	
ARTS 206	Creative Drawing II	
ARTS 220	Photography Studio I	
ARTS 304	Architecture and City Design III	
THTR 223	Scenic Design	
THTR 224	Lighting Design	
One of the following: *		3
MATH 125	Math and Calculus Applications for Life, Managerial, and Social Sci I	
MATH 126	Math and Calculus Applications for Life, Managerial, and Social Sci II	
PHYS 115	Introductory Physics I	
PHYS 116	Introductory Physics II	
PHYS 121	General Physics I - Mechanics	
PHYS 122	General Physics II - Electricity and Magnetism	
Total Units		30

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

Program Minors

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

Art History

ARTH 101	Art History I: Pyramids to Pagodas	3
ARTH 102	Art History II: Michelangelo to Maya Lin	3
Art History electives (at least 3 hours must be taken at the 200 level)		12
Total Units		18

Art Studio

ARTS 101	Design and Color I	3
ARTS 106	Creative Drawing I	3
Four additional studio courses, two of which must be in the same area (i.e., drawing, painting, design, textiles, photography, ceramics and enameling)		12
Total Units		18

Photography

ARTS 220	Photography Studio I	3
ARTS 320	Photography Studio II	3
ARTS 322	Digital Photography I	3
ARTS 325	Creative Photography	3
or ARTS 365D	B&W Photography Studio	
Two of the following:		6
ARTH 102	Art History II: Michelangelo to Maya Lin	
ARTS 399	Independent Study in Art Studio	
ARTS 323	Creative Digital Photography II	
Total Units		18

Pre-Architecture

ARTH 101	Art History I: Pyramids to Pagodas	3
ARTH 102	Art History II: Michelangelo to Maya Lin	3
ARTS 106	Creative Drawing I	3
ARTS 302	Architecture and City Design I	3
ARTS 303	Architecture and City Design II	3
One approved elective (the following are recommended):		3
ARTS 304	Architecture and City Design III	
ARTS 101	Design and Color I	
Total Units		18

Doctor of Philosophy in Art History

Our highly selective doctoral program in art history, founded in 1967 and offered in collaboration with the Cleveland Museum of Art, provides unique training for museum and academic careers. The object-grounded

approach to the study of art history, based on the encyclopedic collections of the CMA and other area institutions, affords an exceptional opportunity to fuse the varied practices of the discipline pursued within the museum and the academy. Through study rooted in careful examination of the specific properties and idiosyncrasies of art objects, students can contribute concretely to a broader cultural and theoretical academic discourse. Graduate students are trained in both traditional and newer, theoretically-based art historical approaches in classes taught by faculty renowned for their expertise in a diversity of fields, all of whom maintain an object-oriented approach to teaching and research. Many CMA curators and museum educators hold adjunct faculty positions and teach courses for the program. Classes are frequently held at the CMA, where students have access to the permanent collections and a rotating schedule of exhibitions as well as to the Ingalls Library, the third largest art research library in the United States.

The innovative CWRU-CMA doctoral program in art history trains flexible and creative professionals who have the tools to achieve excellence in museum and academic careers. The pace of the program is accelerated; full funding for five years of tuition in addition to a \$25,000 yearly stipend enables our doctoral students to work full time on their degrees, with the goal of finishing in five to six years. Many aspects of the current curriculum were developed through two generous grants given jointly to CWRU and the CMA in 2013 and 2019 by the Andrew W. Mellon Foundation as part of a program to further collaborations between art history graduate programs and art museums.

An MA in art history and reading knowledge of one approved foreign language (such as French, German, Italian, Japanese, or Chinese) are prerequisites. Very rarely, an exceptionally well-prepared applicant may be considered for admission with a BA degree only. 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:

ARTH 495	Methodologies of Art History	3
ARTH 496	Materials, Methods, and Physical Examination of Works of Art	3
Four graduate seminars at the 500 level, unless approved otherwise by the director of graduate studies and the student's advisor. At least one seminar must be collection-based, when offered.		12
Six courses at the 400 level or above		18
ARTH 610A	Advanced Visual Arts and Museums: Internship I	3
ARTH 610B	Advanced Visual Arts and Museums Internship II	3
ARTH 701	Dissertation Ph.D.	18
Total Units		60

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 in Asian art should enter the program with a reading knowledge of at least one Asian language (Chinese, Japanese, or Korean). Prior to taking the comprehensive exam, students must demonstrate reading knowledge of two languages relevant to the student's research interests. The second language is chosen in consultation with a faculty advisor. It may be a modern Asian language, a classical Asian language, or a European language.

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, 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 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 on the online test is 100.

The master's degree in art history is conducted exclusively under Plan B as described under the School of Graduate Studies (<http://bulletin.case.edu/schoolofgraduatestudies/academicrequirements/>) in this bulletin. All other requirements of the MA program must be fulfilled:

ARTH 495	Methodologies of Art History	3
Eight graduate courses at the 400 level or above, three of which must be seminars on the 500 level. These eight courses must include one course from four of the following five areas: world art, ancient, medieval, Renaissance/Baroque, and modern/American.		24
ARTH 489	M.A. Qualifying Paper	3
A reading knowledge of one foreign language (normally French, German, or Italian)		
Successful performance on the MA comprehensive examination		
Total Units		30

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 as 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 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 on the online test is 100.

The requirements include:

ARTH 495	Methodologies of Art History	3
ARTH 490A	Visual Arts and Museums I	3
ARTH 490B	Visual Arts and Museums II	3
ARTH 491A	Visual Arts and Museums: Internship	1
ARTH 491B	Visual Arts and Museums: Internship	3
Six graduate courses at the 400 level or above, three of which must be seminars on the 500 level. These six courses must include one course each from four of the following five areas: world art, ancient, medieval, Renaissance/Baroque, and modern/American.		18
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:

LAWS 1201	Civil Procedure	4
LAWS 1101	Contracts	4
LAWS 1102	Criminal Law	3
LAWS 1103	Torts	4
LAWS 1204	Law, Legislation and Regulation	3
LAWS 1203	Property	4
LAWS 1801	Legal Writing, Leadership, Experiential Learning, Advocacy, and Professionalism 1	3
LAWS 1802	Legal Writing, Leadership, Experiential Learning, Advocacy, and Professionalism 2	3

In addition to the 30 credits of first-year courses, JD students must complete LAWS 2001 Professional Responsibility, LAWS 2002

Constitutional Law I, 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 and complete a capstone project during the final year of study. Students should consult the School of Law curriculum guides for details about degree requirements that are applicable to the JD/MA dual degree program.

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 31 hours of course work must be taken at the 400 level or higher, and be distributed as follows:

ARTH 490A	Visual Arts and Museums I	3
ARTH 490B	Visual Arts and Museums II	3
ARTH 491A	Visual Arts and Museums: Internship	1
ARTH 491B	Visual Arts and Museums: Internship	3
ARTH 495	Methodologies of Art History	3
One course in each of the three following areas: *		9
Pre-Modern (pre-1800)		
Modern (post-1800)		
Non-Western		
Relevant Law School courses *		9

* 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 will earn up to 12 credit hours toward the JD degree for completion of the graduate-level art history courses. Credit will not be given for work done in such courses before the student completes the first year of law school. Dual degree students are 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. (30 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
- Total Hours in the Dual Degree Program: 98

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 upperclass courses, ensuring that they will be able to enroll in the classes they need. 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

There is a temporary pause in admissions to the MA 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 required *Thesis Exhibition* based on individual research (not less than 6 semester hours of registration).

Plan II

EDUC 401	Introduction to Education	3
EDUC 404	Educational Psychology	3
EDUC 486	Introduction to Instructional Technology	3
ARTS 385	Clinical/Field Based Experience I	1
ARTS 386	Clinical/Field Based Experience II	1
ARTS 387	Clinical/Field Based Experience III	1
ARTS 400	Current Issues in Art Education	3
ARTS 493	Art Content, Pedagogy, Methodology, and Assessment	3
ARTS 466A	Student Teaching in Art: Pre-K - 6th Grade	4
ARTS 466B	Student Teaching in Art: 7th - 12th Grade	4
ARTS 465	Seminar for Art Teachers	4
ARTS 602	Study in Art Education	3
ARTS 497	Summer Workshop in Art Education	3
Total Units		36

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: Entry 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 Points 2 and 3: Admission to Advanced Standing & Student Teaching

Application for advanced standing and student teaching requires:

1. Cumulative GPA of 2.7 or better
2. Discipline GPA of 2.7 or better
3. Education GPA of 3.0 or better
4. Minimum average score of 2.5 on the ePortfolio
5. Pass TB test; present documentation of hepatitis B vaccinations
6. Pass criminal background checks (BCI & FBI)
7. Minimum average score of 2.5 on *DAI*
8. Successful completion of the *Student Teaching Interview*.

Decision Point 4: Retention During the Student Teaching Semester

1. Minimum average score of 2.75 on each *CWRU Student Teaching Final Assessment* by Cooperating Teacher and University Supervisor during the **first student teaching placement**
2. Minimum average **mid-semester** score of 2.75 on *DAI*

Decision Point 5: Recommendation for Initial Licensure

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

1. Cumulative GPA of 2.7 or better.
2. Discipline GPA of 2.7 or better.
3. Education GPA of 3.0 or better
4. Completion of degree requirements
5. Minimum average score of 3.0 on the ePortfolio
6. Minimum average score of 3.0 or better on *DAI*
7. Completion of *CWRU Final Student Teaching Assessment* by Cooperating Teacher and University Supervisor averaging 3.0 or better on each
8. Achieve passing scores on Ohio Licensure exams
9. Completion of the following: *Feedback on University Supervisor, Feedback on Cooperating Teacher, CWRU Teacher Licensure Exit Interview and Survey.*
10. 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
11. a passing score on *DAI*, completed by the art education faculty
12. achievement of state-mandated scores on the two Ohio Assessments for Educators exams
13. completion of the *CWRU Student Teaching Final Assessment* by the cooperating teacher and university supervisor with a grade of B or better
14. completion of the *CWRU 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.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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 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. Counts for CAS Global & Cultural Diversity Requirement.

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. Art, Power, and Identity in Ancient Rome. 3 Units.

This course explores the history of ancient Roman art and architecture, with a particular emphasis on the Roman Empire. We will focus on situating objects and monument in the changing historical, cultural, political, and religious contexts of the Roman world. The course will introduce students to famous buildings such as the Colosseum and the Pantheon in Rome, but we will also look at lesser known but equally fascinating works that offer insight into the imaginations, aspirations, and identities of the Roman Empire's diverse population. From statues and paintings to oil lamps with erotic scenes, drinking cups with images of famous athletes, and even travel souvenirs, Romans were surrounded by images and objects that allowed them to participate in but also shape and resist a broader imperial culture. Students will consider how art and architecture shaped the complex ways that people living in the Roman world related to the empire and to more regional and local cultural traditions from Egypt and North Africa, Northern Europe, and the Near East. Finally, we will also examine how the legacy of Roman art and architecture continues to fuel debates about power, politics, and representation in the United States, including controversies over Confederate monuments. The course will include frequent visits to the Cleveland Museum of Art and other area sites such as Lakeview Cemetery (where some Cleveland patrons commissioned exact replicas of Roman monuments!). Offered as ARTH 230 and CLSC 230. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

ARTH 280. Modern Art and Modern World. 3 Units.

This course will explore the development of modern art, primarily the art of Europe and the United States, from the late 18th to the mid-20th century. Tracing key art movements and the careers of significant artists, this course will not only examine innovations in style, materials, technique, subject matter, and theory in modern art history, but will also analyze issues related to the rise of new social classes, industrialization and technological development, as well as changes to the urban environment and the development of popular culture in modern society. Through the examination of artists' responses to technological, cultural, social, and political changes, this course will explore the emergence and development of "modernity" and "modernism" in Western art. Visits to the Cleveland Museum of Art will form an integral part of the course.

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 286. Introduction to Contemporary Art. 3 Units.

This course will explore contemporary art and visual culture since the 1960s with a focus on major artistic movements and artists. The first part of the course will focus on changes in artistic practices in the United States and Europe, through the study of Pop Art, Minimalism, Conceptual Art, Institutional Critique, Performance Art, Feminist Art, and Activist Art. The second part of the course will investigate the global turn in contemporary art from the 1980s onward introducing art from Asia, Africa, and the Middle East. This course will examine a set of issues related to postmodernism, postcolonialism, globalization, and transnationalism and trace cultural, social, and geopolitical shifts in contemporary art. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Offered as ARTH 302 and ARTH 402. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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, ARTH 411, and CLSC 311. Counts for CAS Global & Cultural Diversity Requirement.

ARTH 315. Art and Architecture of Ancient Egypt and Mesopotamia. 3 Units.

The golden mask of Tutankhamun, the imposing Ishtar Gate, delicately carved ivories, and expertly chiseled stone sculpture; the art and architecture of Ancient Egypt and Mesopotamia are some of the most captivating examples of visual culture from the ancient world. This course will emphasize the examination of art and architecture of Egypt and Mesopotamia in context, focusing on material from prehistory through the 6th century BC. We will explore the deep connection between art, religion, and the worldview of Ancient Egypt and Mesopotamia, in addition to the meaning and audience for art, the principles which guided art production, trends in media and themes over time, and the relationship of writing and art. We will also consider the interaction between Egyptian and Mesopotamian art, museums and the modern artistic and political landscapes. Offered as ANEE 315, ANEE 415, ARTH 315 and ARTH 415.

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 hoards, 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. Counts for CAS Global & Cultural Diversity Requirement.

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, and CLSC 427. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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 336. Representations of War in Ancient Rome. 3 Units.

Few societies in history have been as militaristic as ancient Rome--or as proud of their warrior culture. This course examines the many ways that Romans constructed and contested their conceptions of war from the founding of the Roman Republic in 509 B.C.E. to the reign of Constantine (306-337 C.E.). Why did Romans choose to represent war in certain ways, and how did these artistic representations shape Romans' military values? What can the visual record tell us about how different groups (soldiers, women, slaves) experienced war in the Roman world? We will explore major public monuments in the city of Rome (including triumphal arches and the Colosseum) and private objects (such as silver drinking vessels) to observe how Roman militarism pervaded different walks of life. We will also examine monuments on the edges of Rome's empire, such as the towering trophies in modern France and Romania, to explore how works of art and architecture mediated the relationship between Romans and the peoples they conquered. Students will be encouraged to think about how art and architecture contributed to the construction of militarism as a chief Roman value, but also about how visual representations provided an important means to debate the value of Rome's military efforts, to subvert Rome's rigidly hierarchical social order, and to grapple with what it meant to "be Roman" as wars transformed Rome from a small city in Italy to a massive, pan-Mediterranean empire. After exploring Romans' conceptions of war and victory, students also may ask whether the common comparison between the Roman Empire and modern America is appropriate. Offered as ARTH 336, ARTH 436, CLSC 336 and CLSC 436. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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 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 interrelations; 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 Haggadah (books for the Passover Seder), Christian courtly romances, and Islamic manuscripts of the *Shahnama* epic. Offered as ARTH 355 and ARTH 455. Counts for CAS Global & Cultural Diversity Requirement.

ARTH 356. Medieval Matters: The Monstrous, the Macabre, the Miraculous. 3 Units.

This course will explore three distinct but interrelated topics in medieval visual culture, which haunt the modern world as well. We will first study the concepts of the monsters and the monstrous in medieval Europe, as they were manifested in visual, literary, and cryptozoological production. From monster theory to monster culture, we will look at the anxieties that the monsters—those from the edges, those from within—have written on the body of medieval art. These same anxieties, rooted in the fear of difference, manifest themselves in the macabre art: the art of living death that predicated material universe of the late Middle Ages. We will explore the ghosts and the revenants, the living corpses and the nimble skeletons that populate medieval murals, manuscripts, and sculpture. All this is wrapped into the notion of the miraculous, both wondrous and dangerous at once. Here, the focus will be on female bodies, seen as monstrous, macabre, and miraculous at once. Students should be prepared to discuss these topics both within the context of medieval Europe and within our own historical moment. Offered as ARTH 356 and ARTH 456.

ARTH 357. Medieval Wonders: Monuments from Across the Globe. 3 Units.

This course will introduce art of the medieval world, considered globally, with a special focus on monuments surviving from the seventh to fifteenth centuries. Emphasis will be on sculpture and architecture; other media—manuscript illumination, wall paintings, ceramics, and metalwork—will be discussed in conjunction with the related sites. We will travel, virtually, to Pre-Columbian Yucatan, Judeo-Christian Europe, Islamic Spain and Central Asia, Hindu and Buddhist India, Tibet, and Southeast Asia. Each week one or two monuments will be discussed in depth, and other sites will be introduced to place it into historical and art historical contexts. Among the themes we will explore are the power relationships between sovereignty and religion; visual expressions of politics and propaganda; the ways literature, performance, and devotion informed medieval material culture; the importance of pilgrimage; and influences of international trade. Ethical and nationalist issues surrounding looting and cultural patrimony will also be discussed. Objects from CMA's permanent collections will form an integral part of the course. Each unit will end with the consideration of collecting practices. Offered as ARTH 357 and ARTH 457.

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, 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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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 ARTH 462. Counts for CAS Global & Cultural Diversity Requirement.

ARTH 365. 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. Counts for CAS Global & Cultural Diversity Requirement.

ARTH 367. 17th and 18th Century Art in France. 3 Units.

A Survey of the arts of painting, sculpture and architecture in France from 1600-1780, a period in which France became the leading political and cultural power in Europe. We will focus on the relationship between the arts and changing social, cultural, religious and political circumstances at a time that saw the rise of the absolute state before the French Revolution, the increased use of art for political propaganda, and the burgeoning of a consumer culture in the middle class. Offered as ARTH 367 and ARTH 467. Counts for CAS Global & Cultural Diversity Requirement.

ARTH 368. Doors Wide Shut: The Private Art Collection from Raphael to Rauschenberg. 3 Units.

A child's room is often stocked with marvels: bird nests, shells, shiny stones, books, and drawings. The great art collections of the Renaissance began in much the same way as these playful assemblages. From cabinets of curiosities containing treasures from foreign lands, to paintings of nude women by Titian and Raphael, these early collections marked the beginning of the modern art museum. What do the hoarding tendencies of the Jesuit Athanasius Kircher (1601-1680), founder of the 'Kircherianum—a museum filled with taxidermy animals and mechanical inventions—have in common with Ronald Lauder's recent and widely publicized purchase of a Gustav Klimt painting for \$135 million? Famous American art collectors of the 19th & 20th centuries like Henry Clay Frick, Isabella Stewart Gardner, and Peggy Guggenheim opened these formerly private realms of display to the public, revealing the complex motives and politics inherent to the practice of art collection. This course will focus first on the conceptual issues that informed early modern collecting in the western world, and subsequently the way that these ideas and modalities later inflected and shaped the history of modern collecting—particularly in the private sector in Europe and America. Offered as: ARTH 368 and ARTH 468. Counts for CAS Global & Cultural Diversity Requirement.

ARTH 374. 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 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 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, ARTH 482 and ESTD 382. Counts for CAS Global & Cultural Diversity Requirement.

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 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 of 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 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 397. Contemporary Art in East Asia. 3 Units.

This course will explore modern and contemporary art and visual culture in East Asia produced since the mid-twentieth century with a focus on major artistic movements and artists active in China, Japan, and Korea. Encountering complicated geopolitical and socioeconomic conditions in the post-war era, a series of experimental and radical artistic, cultural, and political movements have emerged in East Asia. The course will map the critical topographies of Asian art from 1945 to the 1980s through the exploration of the following: post-war art and experimental art in Japan and Korea, Chinese art during the Cultural Revolution, material culture in Japanese Mono-ha and Korean Dansaekhwa, and art of resistance in China and Korea in the 1980s. The course will also investigate contemporary Asian art and visual culture focusing on its global turn from the late 1980s. Fueled by international geopolitical change, economic boom, and the impact of globalization, art in Asia or by Asian artists has gained a high level of international visibility and taken a central position in contemporary art exhibitions and art criticism. This visual, social, and theoretical development in the recent art in Asia will be examined through key issues and themes: art's revisiting of tradition and history, its exploration of body and identity, the impact of consumerism and popular culture, and its engagement with public space and the urban environment. Offered as ARTH 397 and ARTH 497. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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 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. Offered as ARTH 302 and ARTH 402. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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 RLG 308. Counts for CAS Global & Cultural Diversity Requirement.

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 RLG. Offered as ARTH 311, ARTH 411, and CLSC 311. Counts for CAS Global & Cultural Diversity Requirement.

ARTH 415. Art and Architecture of Ancient Egypt and Mesopotamia. 3 Units.

The golden mask of Tutankhamun, the imposing Ishtar Gate, delicately carved ivories, and expertly chiseled stone sculpture; the art and architecture of Ancient Egypt and Mesopotamia are some of the most captivating examples of visual culture from the ancient world. This course will emphasize the examination of art and architecture of Egypt and Mesopotamia in context, focusing on material from prehistory through the 6th century BC. We will explore the deep connection between art, religion, and the worldview of Ancient Egypt and Mesopotamia, in addition to the meaning and audience for art, the principles which guided art production, trends in media and themes over time, and the relationship of writing and art. We will also consider the interaction between Egyptian and Mesopotamian art, museums and the modern artistic and political landscapes. Offered as ANEE 315, ANEE 415, ARTH 315 and ARTH 415.

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 hoards, 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. Counts for CAS Global & Cultural Diversity Requirement.

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, and CLSC 427. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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 436. Representations of War in Ancient Rome. 3 Units.

Few societies in history have been as militaristic as ancient Rome-- or as proud of their warrior culture. This course examines the many ways that Romans constructed and contested their conceptions of war from the founding of the Roman Republic in 509 B.C.E. to the reign of Constantine (306-337 C.E.). Why did Romans choose to represent war in certain ways, and how did these artistic representations shape Romans' military values? What can the visual record tell us about how different groups (soldiers, women, slaves) experienced war in the Roman world? We will explore major public monuments in the city of Rome (including triumphal arches and the Colosseum) and private objects (such as silver drinking vessels) to observe how Roman militarism pervaded different walks of life. We will also examine monuments on the edges of Rome's empire, such as the towering trophies in modern France and Romania, to explore how works of art and architecture mediated the relationship between Romans and the peoples they conquered. Students will be encouraged to think about how art and architecture contributed to the construction of militarism as a chief Roman value, but also about how visual representations provided an important means to debate the value of Rome's military efforts, to subvert Rome's rigidly hierarchical social order, and to grapple with what it meant to "be Roman" as wars transformed Rome from a small city in Italy to a massive, pan-Mediterranean empire. After exploring Romans' conceptions of war and victory, students also may ask whether the common comparison between the Roman Empire and modern America is appropriate. Offered as ARTH 336, ARTH 436, CLSC 336 and CLSC 436. Counts for CAS Global & Cultural Diversity Requirement.

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, Rimpa 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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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 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-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. Counts for CAS Global & Cultural Diversity Requirement.

ARTH 456. Medieval Matters: The Monstrous, the Macabre, the Miraculous. 3 Units.

This course will explore three distinct but interrelated topics in medieval visual culture, which haunt the modern world as well. We will first study the concepts of the monsters and the monstrous in medieval Europe, as they were manifested in visual, literary, and cryptozoological production. From monster theory to monster culture, we will look at the anxieties that the monsters—those from the edges, those from within—have written on the body of medieval art. These same anxieties, rooted in the fear of difference, manifest themselves in the macabre art: the art of living death that predicated material universe of the late Middle Ages. We will explore the ghosts and the revenants, the living corpses and the nimble skeletons that populate medieval murals, manuscripts, and sculpture. All this is wrapped into the notion of the miraculous, both wondrous and dangerous at once. Here, the focus will be on female bodies, seen as monstrous, macabre, and miraculous at once. Students should be prepared to discuss these topics both within the context of medieval Europe and within our own historical moment. Offered as ARTH 356 and ARTH 456.

ARTH 457. Medieval Wonders: Monuments from Across the Globe. 3 Units.

This course will introduce art of the medieval world, considered globally, with a special focus on monuments surviving from the seventh to fifteenth centuries. Emphasis will be on sculpture and architecture; other media—manuscript illumination, wall paintings, ceramics, and metalwork—will be discussed in conjunction with the related sites. We will travel, virtually, to Pre-Columbian Yucatan, Judeo-Christian Europe, Islamic Spain and Central Asia, Hindu and Buddhist India, Tibet, and Southeast Asia. Each week one or two monuments will be discussed in depth, and other sites will be introduced to place it into historical and art historical contexts. Among the themes we will explore are the power relationships between sovereignty and religion; visual expressions of politics and propaganda; the ways literature, performance, and devotion informed medieval material culture; the importance of pilgrimage; and influences of international trade. Ethical and nationalist issues surrounding looting and cultural patrimony will also be discussed. Objects from CMA's permanent collections will form an integral part of the course. Each unit will end with the consideration of collecting practices. Offered as ARTH 357 and ARTH 457.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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 ARTH 462. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

ARTH 467. 17th and 18th Century Art in France. 3 Units.

A Survey of the arts of painting, sculpture and architecture in France from 1600-1780, a period in which France became the leading political and cultural power in Europe. We will focus on the relationship between the arts and changing social, cultural, religious and political circumstances at a time that saw the rise of the absolute state before the French Revolution, the increased use of art for political propaganda, and the burgeoning of a consumer culture in the middle class. Offered as ARTH 367 and ARTH 467. Counts for CAS Global & Cultural Diversity Requirement.

ARTH 468. Doors Wide Shut: The Private Art Collection from Raphael to Rauschenberg. 3 Units.

A child's room is often stocked with marvels: bird nests, shells, shiny stones, books, and drawings. The great art collections of the Renaissance began in much the same way as these playful assemblages. From cabinets of curiosities containing treasures from foreign lands, to paintings of nude women by Titian and Raphael, these early collections marked the beginning of the modern art museum. What do the hoarding tendencies of the Jesuit Athanasius Kircher (1601-1680), founder of the 'Kircherianum—a museum filled with taxidermy animals and mechanical inventions—have in common with Ronald Lauder's recent and widely publicized purchase of a Gustav Klimt painting for \$135 million? Famous American art collectors of the 19th & 20th centuries like Henry Clay Frick, Isabella Stewart Gardner, and Peggy Guggenheim opened these formerly private realms of display to the public, revealing the complex motives and politics inherent to the practice of art collection. This course will focus first on the conceptual issues that informed early modern collecting in the western world, and subsequently the way that these ideas and modalities later inflected and shaped the history of modern collecting—particularly in the private sector in Europe and America. Offered as: ARTH 368 and ARTH 468. Counts for CAS Global & Cultural Diversity Requirement.

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 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, ARTH 482 and ESTD 382. Counts for CAS Global & Cultural Diversity Requirement.

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 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.

First semester of required museum internship. Prereq: 490A and 490B.

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 491A and represent a significant advance in responsibilities and skills. By week 10 of ARTH 491A, 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. Prereq: ARTH 490A, ARTH 490B and 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 Units.

Directed reading.

ARTH 494B. Ancient Art. 1 - 3 Units.**ARTH 494C. Medieval Art. 1 - 3 Units.****ARTH 494D. Renaissance and Baroque Art. 1 - 3 Units.****ARTH 494E. American Art. 1 - 3 Units.****ARTH 494F. Modern Art. 1 - 3 Units.****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 497. Contemporary Art in East Asia. 3 Units.

This course will explore modern and contemporary art and visual culture in East Asia produced since the mid-twentieth century with a focus on major artistic movements and artists active in China, Japan, and Korea. Encountering complicated geopolitical and socioeconomic conditions in the post-war era, a series of experimental and radical artistic, cultural, and political movements have emerged in East Asia. The course will map the critical topographies of Asian art from 1945 to the 1980s through the exploration of the following: post-war art and experimental art in Japan and Korea, Chinese art during the Cultural Revolution, material culture in Japanese Mono-ha and Korean Dansaekhwa, and art of resistance in China and Korea in the 1980s. The course will also investigate contemporary Asian art and visual culture focusing on its global turn from the late 1980s. Fueled by international geopolitical change, economic boom, and the impact of globalization, art in Asia or by Asian artists has gained a high level of international visibility and taken a central position in contemporary art exhibitions and art criticism. This visual, social, and theoretical development in the recent art in Asia will be examined through key issues and themes: art's revisiting of tradition and history, its exploration of body and identity, the impact of consumerism and popular culture, and its engagement with public space and the urban environment. Offered as ARTH 397 and ARTH 497. Counts for CAS Global & Cultural Diversity Requirement.

ARTH 498. 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 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 530. Byzantine Visual Culture. 3 Units.**

This seminar will focus on various aspects of Byzantine visual culture, possibly including monumental and small-scale architecture, architectural decoration (such as mosaics and wall paintings), as well as fixed and portable objects of various materials. Examples of class subjects include "The Byzantine Cult of the Virgin Mary: Image, Ritual, Text;" and "The Agency of Monastic Visual Culture in Byzantium."

ARTH 545. Seminar in Medieval Art. 3 Units.**ARTH 551. Seminar in Early Modern Southern European Art. 3 Units.****ARTH 552. Seminar in Early Modern Northern European Art. 3 Units.****ARTH 565. Seminar in American Art. 3 Units.****ARTH 570. Seminar: 19th Century Art. 3 Units.****ARTH 571. Seminar in Contemporary Art. 3 Units.**

This graduate seminar explores various topics in contemporary art.

ARTH 601. Research in Art History. 1 - 18 Units.

(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.

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 Units.

(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.

Continuation of ARTS 101. Composition: three-dimensional projects. Advanced work in the properties and uses of color and materials. Prereq: ARTS 101.

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.

Learn basic concepts and methods for designing textile surfaces: fabric painting and dyeing. Construct textiles using off-loom weaving and interlacing techniques. Emphasis on development of technical skills, application of design concepts and personal expression.

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 286. Introduction to Video Game Design. 3 Units.

Game design creates meaningful play through interactive experiences. This introductory studio-based course explores games through the development and creation of 2D video games. The course aims to provide a critical vocabulary and historical context for analyzing games and gaming theory and focuses on the skills and techniques necessary to develop 2D video games.

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. Prereq: ARTS 295.

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 and 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 and 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: Architecture, Design & Culture. 3 Units.

Problem Solving is at the very core of Design, and every city is inventive in its own unique way when it comes to Problem Solving, based on its history, culture, geography and native materials. This intensive international 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 an international cultural center. Using the city as our classroom, students will visit well-known sites, museums and monuments as well as hidden gems that reinforce the concepts presented in readings and reviewed in class discussions. 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 exploring a different aspect of the 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 and ARTS 405. Counts for CAS Global & Cultural Diversity Requirement.

ARTS 310. Enameling and Jewelry II. 3 Units.

Continuation of ARTS 210. Advanced enameling and jewelry techniques applied to copper or silver, cloisonne, champleve, basse taille, plique-jour. Creative use of design principles and jewelry techniques. Prereq: ARTS 210.

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.

Continuation of ARTS 214. Problematic approach to technical aspects of ceramics; experience in wheel throwing and option of hand-building. Experimentation with glaze and clay body formulation available. Prereq: ARTS 214.

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.

Introduction of color and digital photography. A systematic approach to the digital photography workflow and its application to creative photography. History of the medium. Field and computer lab work. Advanced amateur digital camera required. Prereq: ARTS 220.

ARTS 323. Creative Digital Photography II. 3 Units.

Creative Digital Photography II: Advanced theory and techniques of the digital photography workflow and its application to creative photography. Field and computer lab work. Advanced amateur digital camera and access to Photoshop CS6 required. Prereq: ARTS 322.

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 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 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.

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 295, ARTS 300, ARTS 385, ARTS 386, ARTS 387, and ARTS 393. Coreq: ARTS 366B and ARTS 465.

ARTS 366B. 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 295, ARTS 300, ARTS 385, ARTS 386, ARTS 387 and ARTS 393. Coreq: ARTS 366A and ARTS 465.

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.

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 295.

ARTS 399. Independent Study in Art Studio. 1 - 3 Units.

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 and 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 and ARTS 403.

ARTS 405. Study Abroad: Architecture, Design & Culture. 3 Units.

Problem Solving is at the very core of Design, and every city is inventive in its own unique way when it comes to Problem Solving, based on its history, culture, geography and native materials. This intensive international 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 an international cultural center. Using the city as our classroom, students will visit well-known sites, museums and monuments as well as hidden gems that reinforce the concepts presented in readings and reviewed in class discussions. 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 exploring a different aspect of the 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 and ARTS 405. Counts for CAS Global & Cultural Diversity Requirement.

ARTS 465. 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 366B 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 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 Units.

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

215 Mather Memorial
 asia.case.edu/ (<http://asia.case.edu/>)
 Phone: 216.368.5362
 Lihong Shi, Program Advisor
 lihong.shi@case.edu

Asian studies have 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 website 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.

Department Faculty

Lihong Shi, PhD
(Tulane University)
Associate Professor, Department of Anthropology; Director, Asian Studies Program

Ananya Dasgupta, PhD
(University of Pennsylvania)
Assistant Professor, Department of History

William E. Deal, PhD
(Harvard University)
Severance Professor in the History of Religion, Department of Religious Studies; Department of Cognitive Science

Melvyn C. Goldstein, PhD
(University of Washington)
John Reynolds Harkness Professor, Department of Anthropology; Co-Director, Center for Research on Tibet

Kelly M. McMann, PhD
(University of Michigan)
Professor, Department of Political Science

Eunyoung Park, PhD
(University of Kansas)
Assistant Professor, Department of Art History and Art

Jonathan Tan, PhD
(The Catholic University of America)
Archbishop Paul J. Hallinan Professor in Catholic Studies; Associate Professor, Department of Religious Studies

Peter Yang, PhD
(University of Utah)
Associate Professor, Department of Modern Languages and Literatures

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 Asian Studies

Language Courses:

CHIN 101	Elementary Chinese I	4
CHIN 102	Elementary Chinese II	4
CHIN 201	Intermediate Chinese I	4
CHIN 202	Intermediate Chinese II	4
CHIN 203	Intermediate Chinese III	4
CHIN 240	Modern Chinese Literature in Translation	3
CHIN 250	Classical Chinese Literature in Translation	3
CHIN 301	Advanced Chinese I	4
CHIN 302	Advanced Chinese II	4
CHIN 315	Business Chinese	3
CHIN 320	Chinese Popular Culture	3
CHIN 330	Chinese Cinema	3
CHIN 380	Contemporary Chinese Texts I	3
CHIN 399	Independent Study	1 - 3
CHIN 415	Business Chinese	3

JAPN 101	Elementary Japanese I	4	HSTY 289	Reform, Revolution, Republics: China 1895 to Present	3
JAPN 102	Elementary Japanese II	4	HSTY 324	Issues in Indian and Southeast Asian Art	3
JAPN 201	Intermediate Japanese I	4	Political Science:		
JAPN 202	Intermediate Japanese II	4	POSC 353	Political Thought and Political Change in China	3
JAPN 225	Japanese Popular Culture	3	POSC 370D	The Politics of China *	3
JAPN 245	Classical Japanese Literature in Translation	3	Religious Studies		
JAPN 255	Modern Japanese Literature in Translation	3	RLGN 108	The History of Yoga: The Yoga of Transformation and the Transformation of Yoga	3
JAPN 301	Advanced Japanese I	4	RLGN 152	Introducing Buddhism	3
JAPN 302	Advanced Japanese II	4	RLGN 153	Introducing Chinese Religions	3
JAPN 345	Japanese Women Writers	3	RLGN 154	Introducing Hinduism	3
JAPN 350	Contemporary Japanese Texts I *	3	RLGN 155	Introducing Jainism	3
JAPN 351	Contemporary Japanese Texts II *	3	RLGN 221	Indian Philosophy	3
JAPN 355	Modern Japanese Novels and the West	3	RLGN 229	Asian Christianity: Historical Perspectives	3
JAPN 397	Senior Thesis I	3	RLGN 237	Religion and Dance in South Asia	3
JAPN 398	Senior Thesis II	3	RLGN 353	Hindu and Jain Bioethics: Special Focus on Women's and Gender Studies	3
JAPN 399	Independent Study	1 - 3	WLIT 245	Classical Japanese Literature in Translation	3
JAPN 450	Japanese in Cultural Context I	3	WLIT 255	Modern Japanese Literature in Translation	3
JAPN 451	Japanese in Cultural Context II	3	WLIT 345	Japanese Women Writers	3
Anthropology:					
ANTH 312	Ethnography of Southeast Asia	3	* These courses are simultaneously offered at the 400 level for graduate students.		
ANTH 331	The Most Ancient Near East	3			
ANTH 333	Roots of Ancient India: Archaeology of South Asia	3			
ANTH 353	Chinese Culture and Society	3			
ANTH 354	Health and Healing in East Asia	3			
Asia:					
ASIA 240	Modern Chinese Literature in Translation	3			
ASIA 250	Classical Chinese Literature in Translation	3			
ASIA 288	Imperial China: The Great Qing	3			
ASIA 289	Reform, Revolution, Republics: China 1895 to Present	3			
ASIA 320	Chinese Popular Culture	3			
ASIA 330	Chinese Cinema	3			
ASIA 398	Honors Thesis	1 - 4			
ASIA 399	Independent Study	1 - 3			
Art History:					
ARTH 203	The Arts of Asia	3			
ARTH 208	Arts of Japan	3			
ARTH 302	Buddhist Art in Asia *	3			
ARTH 307	Arts 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 288	Imperial China: The Great Qing	3			

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. Counts for CAS Global & Cultural Diversity Requirement.

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 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. Offered as CHIN 240, ASIA 240 and WLIT 240. Counts for CAS Global & Cultural Diversity Requirement.

ASIA 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. Offered as CHIN 250, ASIA 250 and WLIT 250. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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 socio-economic 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. Counts for CAS Global & Cultural Diversity Requirement.

ASIA 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. Offered as: CHIN 320, ASIA 320 and WLIT 320. Counts for CAS Global & Cultural Diversity Requirement.

ASIA 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. Offered as CHIN 330 and ASIA 330. Counts for CAS Global & Cultural Diversity Requirement.

ASIA 398. Honors Thesis. 1 - 4 Units.

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 Units.

Tutorial in Asian Studies.

Department of Astronomy

567 Sears Library Building

astronomy.case.edu/ (<http://astronomy.case.edu/>)

Phone: 216.368.3278

Stacy S. McGaugh, Department Chair

dept@astroweb.case.edu

The Department of Astronomy offers two undergraduate degrees, a Bachelor of Science and a Bachelor of Arts. The BS provides a rigorous sequence of subject-specific courses, while the BA degree provides somewhat more flexibility in the choice of courses. The department also offers a minor in astronomy.

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, Ariz., home of the Burrell Schmidt telescope. This telescope is used for surveys and ultra-deep imaging with a large format CCD. Observatory operations are managed by Dr. Paul Harding and Charles Knox. Dr. Harding also leads departmental efforts in instrumentation for the Observatory.

On the Case Western Reserve campus, 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.

Department Faculty

Stacy S. McGaugh, PhD

(University of Michigan)

Professor and Chair; Director, Warner and Swasey Observatory

Galaxy formation and evolution; low surface brightness galaxies; cosmology; dark matter and gravity

William F. Janesh, PhD

(Indiana University)

Instructor

Searches for dwarf galaxies; development of software tools

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

Adjunct Faculty

Jeffery R. Kriessler, PhD

(Michigan State University)

Adjunct Assistant Professor

Substructure in galaxy clusters

Secondary Faculty

John Ruhl, PhD

(Princeton University)

Connecticut Professor, Department of Physics

Experimental astrophysics and cosmology

Glenn D. Starkman, PhD

(Stanford University)

Distinguished University Professor, Department of Physics

Theoretical cosmology; particle physics; astrophysics

Bachelor of Science in Astronomy

The Bachelor of Science in astronomy requires 122 credit hours, including 23 hours in astronomy, 40 hours in physics, 14 hours in math, 3 hours in computer programming and 12 hours in technical electives.

Major courses

ASTR 221	Stars and Planets	3
ASTR 222	Galaxies and Cosmology	3
ASTR 306	Astronomical Techniques	3
ASTR 309	Astrophysics Seminar I	1
ASTR 310	Astrophysics Seminar II	1
ASTR 311	Stellar Physics	3
ASTR 323	The Local Universe	3
ASTR 328	Cosmology and the Structure of the Universe	3
ASTR 333	Dark Matter	3

Additional required 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	
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 204	Advanced Instrumentation Laboratory	4
PHYS 221	Introduction to Modern Physics	3
PHYS 250	Computational Methods in Physics	3
PHYS 310	Classical Mechanics	3
PHYS 313	Thermodynamics and Statistical Mechanics	3
PHYS 324	Electricity and Magnetism I	3
PHYS 325	Electricity and Magnetism II	3
PHYS 331	Introduction to Quantum Mechanics I	3
PHYS 332	Introduction to Quantum Mechanics II	3
ENGR 131	Elementary Computer Programming	3
Approved technical electives (these can be from the Departments of Astronomy; Chemistry; Mathematics, Applied Mathematics, and Statistics; Physics; or Earth, Environmental, and Planetary Sciences. Check with advisor for complete list.)		12
MATH 201	Introduction to Linear Algebra for Applications	
EEPS 345	Planetary Materials	
PHYS 316	Introduction to Nuclear and Particle Physics	
PHYS 349	Methods of Mathematical Physics I	
PHYS 326	Physical Optics	
PHYS 350	Methods of Mathematical Physics II	
Total Units		92

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	Units	
	Fall	Spring
Calculus for Science and Engineering I (MATH 121)	4	
General Physics I - Mechanics (PHYS 121) ^a	4	
PHED (2 half semester courses)	0	
SAGES First Seminar	4	
Social Science I	3	
Calculus for Science and Engineering II (MATH 122) or Calculus II (MATH 124)		4
General Physics II - Electricity and Magnetism (PHYS 122)		4
PHED (2 half semester courses)	0	
Elementary Computer Programming (ENGR 131)		3
Doing Astronomy (ASTR 151) [*]		1

Arts & Humanities I		3
Year Total:	15	15

Second Year	Units	
	Fall	Spring
Stars and Planets (ASTR 221)	3	
Calculus for Science and Engineering III (MATH 223) or Calculus III (MATH 227)	3	
Introduction to Modern Physics (PHYS 221) ^a	3	
Analog and Digital Electronics (PHYS 203)	4	
SAGES University Seminar	3	
Galaxies and Cosmology (ASTR 222)		3
Elementary Differential Equations (MATH 224) or Differential Equations (MATH 228)		3
Advanced Instrumentation Laboratory (PHYS 204)		4
Computational Methods in Physics (PHYS 250)		3
SAGES University Seminar		3
Year Total:	16	16

Third Year	Units	
	Fall	Spring
Cosmology and the Structure of the Universe (ASTR 328) ^b	3	
Thermodynamics and Statistical Mechanics (PHYS 313)	3	
Technical Elective	3	
Arts & Humanities II	3	
Social Science II	3	
Stellar Physics (ASTR 311) ^b		3
Electricity and Magnetism I (PHYS 324)		3
Classical Mechanics (PHYS 310)		3
Quantitative Reasoning		3
Technical Elective		3
Year Total:	15	15

Fourth Year	Units	
	Fall	Spring
Astronomical Techniques (ASTR 306) ^b	3	
Astrophysics Seminar I (ASTR 309)	1	
The Local Universe (ASTR 323) ^b	3	
Electricity and Magnetism II (PHYS 325)	3	
Introduction to Quantum Mechanics I (PHYS 331)	3	
Astronomy Capstone Project (ASTR 351) ^c	1 - 3	
Technical Elective	3	
Astrophysics Seminar II (ASTR 310)		1
Dark Matter (ASTR 333) ^b		3
Introduction to Quantum Mechanics II (PHYS 332)		3
Astronomy Capstone Project (ASTR 351) ^c		1 - 3
Technical Elective		3
Global and Cultural Diversity		3
Year Total:	17-19	14-16

Total Units in Sequence: 123-127

- a 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.
- b ASTR 306 Astronomical Techniques, ASTR 311 Stellar Physics, ASTR 323 The Local Universe, ASTR 328 Cosmology and the Structure of the Universe, and ASTR 333 Dark Matter are taught every other year only.
- c 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.

Bachelor of Arts in Astronomy

The Bachelor of Arts in astronomy requires 120 credit hours, including 20 hours in astronomy, 26 hours in physics, 14 hours in math, 3 hours in computer programming, and 6 hours in technical electives.

Required 200 Level Courses 6

ASTR 221	Stars and Planets
ASTR 222	Galaxies and Cosmology

Required 300 Level Courses 5

ASTR 306	Astronomical Techniques
ASTR 309	Astrophysics Seminar I
ASTR 310	Astrophysics Seminar II

Additional 300 Level Courses—3 of 4 Required 9

ASTR 311	Stellar Physics
ASTR 323	The Local Universe
ASTR 328	Cosmology and the Structure of the Universe (Additional required courses)
ASTR 333	Dark Matter

Additional required 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	
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 250	Computational Methods in Physics	3
PHYS 310	Classical Mechanics	3
PHYS 313	Thermodynamics and Statistical Mechanics	3
PHYS 324	Electricity and Magnetism I	3
PHYS 331	Introduction to Quantum Mechanics I	3
ENGR 131	Elementary Computer Programming	3
Approved technical electives (consult advisor for other acceptable classes)		6
PHYS 204	Advanced Instrumentation Laboratory	
PHYS 316	Introduction to Nuclear and Particle Physics	
PHYS 325	Electricity and Magnetism II	
PHYS 326	Physical Optics	
PHYS 332	Introduction to Quantum Mechanics II	

Total Units 69

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

First Year	Units	
	Fall	Spring
Calculus for Science and Engineering I (MATH 121)	4	
General Physics I - Mechanics (PHYS 121)	4	
SAGES First Seminar	4	
PHED (2 half semester courses)	0	
Social Science I	3	
Calculus for Science and Engineering II (MATH 122) or Calculus II (MATH 124)		4
General Physics II - Electricity and Magnetism (PHYS 122)		4
Elementary Computer Programming (ENGR 131)		3
PHED (2 half semester courses)		0
Doing Astronomy (ASTR 151)*		1
Social Science II		3
Year Total:	15	15

Second Year	Units	
	Fall	Spring
Stars and Planets (ASTR 221)	3	
Calculus for Science and Engineering III (MATH 223) or Calculus III (MATH 227)	3	
Introduction to Modern Physics (PHYS 221)	3	
SAGES University Seminar	3	
Galaxies and Cosmology (ASTR 222)		3
Elementary Differential Equations (MATH 224) or Differential Equations (MATH 228)		3
Computational Methods in Physics (PHYS 250)		3

Classical Mechanics (PHYS 310)	3
SAGES University Seminar	3
Year Total:	12 15

Third Year	Units	
	Fall	Spring
Cosmology and the Structure of the Universe (ASTR 328)	3	
Thermodynamics and Statistical Mechanics (PHYS 313)	3	
Arts & Humanities I	3	
Arts & Humanities II	3	
Technical Elective	3	
Stellar Physics (ASTR 311)		3
Electricity and Magnetism I (PHYS 324)		3
Quantitative Reasoning		3
Technical Elective		3
Year Total:	15	12

Fourth Year	Units	
	Fall	Spring
Astronomical Techniques (ASTR 306) ^a	3	
Astrophysics Seminar I (ASTR 309)	1	
Introduction to Quantum Mechanics I (PHYS 331)	3	
Astronomy Capstone Project (ASTR 351) ^b	1 - 3	
Global and Cultural Diversity	3	
Astrophysics Seminar II (ASTR 310)		1
Dark Matter (ASTR 333)		3
Astronomy Capstone Project (ASTR 351) ^b		1 - 3
Year Total:	11-13	5-7

Total Units in Sequence: 100-104

- ^a 300-level astronomy courses: three of the following five are required: ASTR 306, ASTR 311, ASTR 323, ASTR 328, ASTR 333.
- ^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	
Both classes:		6
ASTR 221	Stars and Planets	
ASTR 222	Galaxies and Cosmology	
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	
ASTR 333	Dark Matter	
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.

Courses

ASTR 101. Introduction to the Sun and Its Planets. 3 Units.

This introductory astronomy course describes our solar system of planets and how astronomers develop our physical understanding about the universe. Topics include the properties of the Sun and planets; the formation of the solar system and how the planets have evolved over time; asteroids, comets, and dwarf planets; and a comparison of our solar system with new planetary systems being found around other stars. This course has no pre-requisites.

ASTR 103. Introduction to the Stars, Galaxies, and the Universe. 3 Units.

This introductory astronomy course describes the universe we live in and how astronomers develop our physical understanding about it. Topics covered include: the properties of stars; the formation, evolution, and death of stars; white dwarfs, pulsars, and black holes; spiral and elliptical galaxies; the Big Bang and the expansion of the Universe. This course has no pre-requisites.

ASTR 105. Introduction to Einstein's Universe. 3 Units.

This course is a descriptive introduction for the non-science major to Einstein's Special and General Theories of Relativity and how these theories have fundamentally altered our understanding of the universe. Topics discussed will include: time dilation, length contraction, the twin paradox, the warping of space-time, white dwarf stars, neutron stars, black holes, the structure and evolution of the universe. No mathematical background beyond simple algebra is needed. This course has no pre-requisites.

ASTR 107. Introduction to 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. This course has no pre-requisites.

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 221. Stars and Planets. 3 Units.

Stellar structure and energy production. Formation and evolution of stars. Supernovae, neutron stars, and black holes. Star clusters. Planetary systems and the detection of extrasolar planets. The application of physical laws to the study of the universe. Prereq: MATH 122 or MATH 126.

ASTR 222. Galaxies and Cosmology. 3 Units.

The Milky Way Galaxy. Structure, dynamics, and evolution of galaxies. Galaxy clusters and large scale structure of the Universe. Physical cosmology and the Big Bang. Evolution of the Universe. Prereq: ASTR 221.

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. Prereq: ASTR 222 or Requisites Not Met permission.

ASTR 310. Astrophysics Seminar II. 1 Unit.

Selected topics in astronomy not covered ordinarily in courses. Presentation of talks by students. Prereq: ASTR 222 or Requisites Not Met permission.

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.

The Milky Way Galaxy. Galaxy populations. Quantitative structure and dynamics of galaxies. The interstellar media of galaxies. Dark matter and stellar populations. The Local Group and Virgo cluster. Offered as ASTR 323 and ASTR 423. Prereq: ASTR 222.

ASTR 328. 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 galaxy formation and evolution. Testing cosmological models. Offered as ASTR 328, PHYS 328, ASTR 428, and PHYS 428. Prereq: ASTR 222.

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 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. Prereq: PHYS 310 or requisites not met permission.

ASTR 351. Astronomy Capstone Project. 1 - 3 Units.

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 Units.

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 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 supernovae explosions. Offered as ASTR 311 and ASTR 411.

ASTR 423. The Local Universe. 3 Units.

The Milky Way Galaxy. Galaxy populations. Quantitative structure and dynamics of galaxies. The interstellar media of galaxies. Dark matter and stellar populations. The Local Group and Virgo cluster. Offered as ASTR 323 and ASTR 423.

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 galaxy 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 Units.**ASTR 601. Research. 1 - 18 Units.**

Original research under the guidance of the staff.

ASTR 651. Thesis M.S.. 1 - 18 Units.

(Credit as arranged.)

ASTR 701. Dissertation Ph.D.. 1 - 9 Units.

(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.

Major

The two undergraduate major programs in Biochemistry, BA and BS, are based on the Arts and Sciences General Education Requirements but differ in amount and intensity of the mathematics and physical sciences required. Either degree is excellent for students planning to undertake graduate work in biochemistry or in related areas of the biomedical sciences. Both the BA and the BS programs permit students to follow many options after graduation. Graduates are well prepared for further studies in the biological sciences, for degrees in the health sciences (MD, DO, DDS, PharmD), for employment in the chemical, pharmaceutical, and biotechnology industries, or as research assistants in research laboratories. The BA makes a considerable amount of elective time available, which allows students to concentrate on biochemistry more intensively than the curriculum requires, or pursue other subjects in

science or liberal arts. The BS degree has additional course requirements in the quantitative and physical sciences; it is intended for students with interests in these areas.

In both programs, undergraduate research is required. As many as nine hours of Research in Biochemistry (BIOC 391 Research Project) may be credited toward the requirements for graduation. At least six credits are highly recommended. Students present their research during their last semester (BIOC 393 Senior Capstone Experience) as a written thesis and a presentation at the Biochemistry Undergraduate Retreat.

Bachelor of Arts in Biochemistry

Required Courses:

BIOC 307	Introduction to Biochemistry: From Molecules To Medical Science	4
BIOC 308	Molecular Biology	4
BIOC 373	Biochemistry SAGES Seminar (SAGES Departmental Seminar)	3
Biochemistry elective:		3
BIOC 312 or BIOC 334	Proteins and Enzymes Structural Biology	
Two approved technical electives in biochemistry		6
BIOC 393	Senior Capstone Experience	3
Additional Required Courses:		
BIOL 214 & 214L	Genes, Evolution and Ecology and Genes, Evolution and Ecology Lab	4
BIOL 215 & 215L	Cells and Proteins and Cells and Proteins Laboratory	4
CHEM 105 or CHEM 111	Principles of Chemistry I Principles of Chemistry for Engineers	3-4
CHEM 106 or ENGR 145	Principles of Chemistry II Chemistry of Materials	3-4
CHEM 113	Principles of Chemistry Laboratory	
CHEM 223 or CHEM 323	Introductory Organic Chemistry I Organic Chemistry I	3
CHEM 224 or CHEM 324	Introductory Organic Chemistry II Organic Chemistry II	3
CHEM 233	Introductory Organic Chemistry Laboratory I	2
CHEM 234	Introductory Organic Chemistry Laboratory II	2
CHEM 301	Introductory Physical Chemistry I	3
MATH 125 or MATH 121	Math and Calculus Applications for Life, Managerial, and Social Sci I Calculus for Science and Engineering I	4
MATH 126 or MATH 122 or MATH 124	Math and Calculus Applications for Life, Managerial, and Social Sci II Calculus for Science and Engineering II Calculus II	4
PHYS 115 or PHYS 121 or PHYS 123	Introductory Physics I General Physics I - Mechanics Physics and Frontiers I - Mechanics	4
PHYS 116 or PHYS 122	Introductory Physics II General Physics II - Electricity and Magnetism	4

or PHYS 124	Physics and Frontiers II - Electricity and Magnetism	
Total Units		66-68

BA Biochemistry, Sample Plan of Study

	Units	
	Fall	Spring
Math and Calculus Applications for Life, Managerial, and Social Sci I (MATH 125) or Calculus for Science and Engineering I (MATH 121)	4	
Principles of Chemistry I (CHEM 105) or Principles of Chemistry for Engineers (CHEM 111)	3	
Independent Activity (PHED 100)	0	
SAGES First Seminar	4	
Genes, Evolution and Ecology (BIOL 214) & Genes, Evolution and Ecology Lab (BIOL 214L)	4	
Math and Calculus Applications for Life, Managerial, and Social Sci II (MATH 126) or Calculus for Science and Engineering I (MATH 121) or Calculus II (MATH 124)		4
Principles of Chemistry II (CHEM 106) or Chemistry of Materials (ENGR 145)		3
Principles of Chemistry Laboratory (CHEM 113)		2
SAGES University Seminar I		3
Cells and Proteins (BIOL 215) & Cells and Proteins Laboratory (BIOL 215L)		4
Independent Activity (PHED 100)		0
Year Total:	15	16

Sophomore

	Units	
	Fall	Spring
Introductory Organic Chemistry I (CHEM 223) ^a or Organic Chemistry I (CHEM 323)	3	
Introductory Organic Chemistry Laboratory I (CHEM 233)	2	
Introductory Physics I (PHYS 115) ^b or General Physics I - Mechanics (PHYS 121) or Physics and Frontiers I - Mechanics (PHYS 123)	4	
GER Course	3	
SAGES University Seminar II	3	
Introductory Organic Chemistry II (CHEM 224) ^a or Organic Chemistry II (CHEM 324)		3
Introductory Organic Chemistry Laboratory II (CHEM 234)		2
Introductory Physics II (PHYS 116) ^b or General Physics II - Electricity and Magnetism (PHYS 122) or Physics and Frontiers II - Electricity and Magnetism (PHYS 124)		4
GER Course		3
Elective		3
Year Total:	15	15

	Units	
	Fall	Spring
Introductory Physical Chemistry I (CHEM 301) or Physical Chemistry I (CHEM 335)	3	
Introduction to Biochemistry: From Molecules To Medical Science (BIOC 307)	4	
GER Course	3	
Electives	6	
Molecular Biology (BIOC 308)		4
Approved Technical Elective		3
Research Project (BIOC 391)		3
Electives or GER Courses		6
Year Total:	16	16

Senior

	Units	
	Fall	Spring
Biochemistry SAGES Seminar (BIOC 373)	3	
Research Project (BIOC 391)	3	
Electives	6	
Proteins and Enzymes (BIOC 312) (or Approved Technical Electives) ^c	3	
Senior Capstone Experience (BIOC 393)		3
Structural Biology (BIOC 334) (or Approved Biochem or Technical Elective) ^c		3
Electives		6-9
Year Total:	15	12-15

Total Units in Sequence: 120-123

Note: At least 3 credits of undergraduate research, BIOC 391 Research Project, is recommended for the Capstone. An additional 3 credits of BIOC 391 is highly recommended. Students should consult their academic advisers about the elective parts of the curriculum. A course in statistics or quantitative biology is suggested but not required.

- a Selected students may be invited to take CHEM 323 Organic Chemistry I or CHEM 324 Organic Chemistry II
- b Selected students may be invited to take PHYS 123 Physics and Frontiers I - Mechanics and PHYS 124 Physics and Frontiers II - Electricity and Magnetism in place of PHYS 121 General Physics I - Mechanics and PHYS 122 General Physics II - Electricity and Magnetism
- c BA students must take either BIOC 312 Proteins and Enzymes or BIOC 334 Structural Biology. For BA students who take both courses, one course will serve as a technical elective.

Bachelor of Science in Biochemistry

Required Courses:

BIOC 307	Introduction to Biochemistry: From Molecules To Medical Science	4
BIOC 308	Molecular Biology	4
BIOC 312	Proteins and Enzymes	3
BIOC 334	Structural Biology	3
BIOC 373	Biochemistry SAGES Seminar	3
	Approved Technical Elective in Biochemistry	3

BIOC 393	Senior Capstone Experience	3
BIOL 214 & 214L	Genes, Evolution and Ecology and Genes, Evolution and Ecology Lab	4
BIOL 215 & 215L	Cells and Proteins and Cells and Proteins Laboratory	4
CHEM 105 or CHEM 111	Principles of Chemistry I Principles of Chemistry for Engineers	3-4
CHEM 106 or ENGR 145	Principles of Chemistry II Chemistry of Materials	3-4
CHEM 113	Principles of Chemistry Laboratory	2
CHEM 223 or CHEM 323	Introductory Organic Chemistry I Organic Chemistry I	3
CHEM 224 or CHEM 324	Introductory Organic Chemistry II Organic Chemistry II	3
CHEM 301 or CHEM 335	Introductory Physical Chemistry I Physical Chemistry I	3
CHEM 302 or CHEM 336	Introductory Physical Chemistry II Physical Chemistry II	3
CHEM 233	Introductory Organic Chemistry Laboratory I	2
CHEM 234	Introductory Organic Chemistry Laboratory II	2
MATH 121	Calculus for Science and Engineering I	4
MATH 122 or MATH 124	Calculus for Science and Engineering II Calculus II	4
MATH 223 or MATH 227	Calculus for Science and Engineering III Calculus III	3
MATH 224 or MATH 228	Elementary Differential Equations Differential Equations	3
PHYS 121 or PHYS 123	General Physics I - Mechanics Physics and Frontiers I - Mechanics	4
PHYS 122 or PHYS 124	General Physics II - Electricity and Magnetism Physics and Frontiers II - Electricity and Magnetism	4
PHYS 221	Introduction to Modern Physics	3
STAT 312R or STAT 313	Basic Statistics for Engineering and Science Using R Programming Statistics for Experimenters	3
Total Units		83-85

BS Biochemistry, Sample Plan of Study

	Units	
	Fall	Spring
Calculus for Science and Engineering I (MATH 121)	4	
Principles of Chemistry I (CHEM 105) or Principles of Chemistry for Engineers (CHEM 111)	3	
Independent Activity (PHED 100)	0	
SAGES First Semester	4	
Genes, Evolution and Ecology (BIOL 214) & Genes, Evolution and Ecology Lab (BIOL 214L)	4	

Calculus for Science and Engineering II (MATH 122) or Calculus II (MATH 124)	4
Principles of Chemistry II (CHEM 106) or Chemistry of Materials (ENGR 145)	3
Principles of Chemistry Laboratory (CHEM 113)	2
SAGES University Seminar I	3
Cells and Proteins (BIOL 215) & Cells and Proteins Laboratory (BIOL 215L)	4
Independent Activity (PHED 100)	0
Year Total:	15 16

Sophomore

	Units	
	Fall	Spring
Introductory Organic Chemistry I (CHEM 223) ^a or Organic Chemistry I (CHEM 323)	3	
Introductory Organic Chemistry Laboratory I (CHEM 233)	2	
Calculus for Science and Engineering III (MATH 223) or Calculus III (MATH 227)	3	
General Physics I - Mechanics (PHYS 121) ^b or Physics and Frontiers I - Mechanics (PHYS 123)	4	
SAGES University Seminar II	3	
Introductory Organic Chemistry II (CHEM 224) ^a or Organic Chemistry II (CHEM 324)		3
Introductory Organic Chemistry Laboratory II (CHEM 234)		2
Elementary Differential Equations (MATH 224) or Differential Equations (MATH 228)		3
General Physics II - Electricity and Magnetism (PHYS 122) ^b or Physics and Frontiers II - Electricity and Magnetism (PHYS 124)		4
GER Course		3
Year Total:	15	15

Junior

	Units	
	Fall	Spring
Introductory Physical Chemistry I (CHEM 301) or Physical Chemistry I (CHEM 335)	3	
Introduction to Biochemistry: From Molecules To Medical Science (BIOC 307)	4	
GER Course	3	
GER Course or elective	3	
Basic Statistics for Engineering and Science Using R Programming (STAT 312R) or Statistics for Experimenters (STAT 313)	3	
Introductory Physical Chemistry II (CHEM 302) or Physical Chemistry II (CHEM 336)		3
Molecular Biology (BIOC 308)		4
Introduction to Modern Physics (PHYS 221)		3
Research Project (BIOC 391)		3
GER Course or Elective		3
Year Total:	16	16

Senior	Units	
	Fall	Spring
Proteins and Enzymes (BIOC 312)	3	
Biochemistry SAGES Seminar (BIOC 373)	3	
Research Project (BIOC 391)	3	
Electives	6	
Structural Biology (BIOC 334)		3
Senior Capstone Experience (BIOC 393)		3
Electives		9
Year Total:	15	15

Total Units in Sequence: 123

Note: At least 3 credits of undergraduate research, BIOC 391 Research Project, is recommended for the Capstone. An additional 3 credits of BIOC 391 is highly recommended. Students should consult their academic advisers about the elective parts of the curriculum.

- a Selected students may be invited to take CHEM 323 Organic Chemistry I or CHEM 324 Organic Chemistry II
- b Selected students may be invited to take PHYS 123 Physics and Frontiers I - Mechanics and PHYS 124 Physics and Frontiers II - Electricity and Magnetism in place of PHYS 121 General Physics I - Mechanics and PHYS 122 General Physics II - Electricity and Magnetism.

Honors Program

Biochemistry majors who have excellent academic records may be admitted to the department's Undergraduate Honors Program. To graduate with departmental honors in biochemistry, a student must satisfy the following requirements:

1. A combined grade point average of at least 3.600
2. A minimum of 6 credit hours of undergraduate research (BIOC 391) in one laboratory
3. A BIOC 393 capstone report approved by the Undergraduate Education Committee of the department on the basis of the quality of the research, the written report, and an oral presentation. An acceptable report:
 - a. Should follow a standard journal format
 - b. Should demonstrate the student's understanding of the research area, experimental techniques, goals and implications of the project
 - c. Should show that the student has advanced his/her knowledge of the applicable techniques and the underlying scientific concepts.
4. Using all or part of the capstone report, the student must be a co-author on a manuscript either submitted, in press or published in a peer reviewed journal.

Minor

Required Courses:

BIOC 307	Introduction to Biochemistry: From Molecules To Medical Science	4
----------	---	---

BIOC 308	Molecular Biology	4
BIOC 312 or BIOC 334	Proteins and Enzymes Structural Biology	3
Approved technical elective in biochemistry		3
Total Units		14

Students may obtain credit for a minor in biochemistry by completing one year of freshman chemistry (including laboratory), one year of organic chemistry (including laboratory), two semesters of approved biology courses, and three semesters of didactic courses in biochemistry.

Department of Biology

203 DeGrace Hall

www.case.edu/artsci/biol/

Phone: 216.368.3557; Fax: 216.368.4672

Mark Willis, Department Chair

mark.willis@case.edu

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 Science in Neuroscience, 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. The department also operates an extensive field research station at Squire Valleevue Farm, located about 10 miles east of the University. 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 4:00 p.m. and are open to the university community.

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)
Professor
Ecology; theoretical biology

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

Sarah C. Bagby, PhD
(Massachusetts Institute of Technology)
Assistant Professor
Microbial and viral evolution and community dynamics; geobiology; microbial physiology; bioinformatics and ecoinformatics

Michael F. Benard, PhD
(University of California, Davis)
Associate Professor
Ecology; evolutionary biology

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

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

Jean H. Burns, PhD
(Florida State University)
Associate 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

Nicole Crown, PhD
(Indiana University)
Assistant Professor
Molecular genetics of meiosis in *Drosophila melanogaster*

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

Yolanda M. Fortenberry, PhD
(Louisiana State University School of Medicine)
Associate Professor
Regulation of blood coagulation; development of RNA aptamers as anticoagulants and for treatment of sickle cell disease

Jessica L. Fox, PhD
(University of Washington)
Associate 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. Kuemerle, 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)
Senior Instructor
Evolutionary ecology of cichlid fishes; ichthyology

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

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

Joy K. Ward, PhD
(Duke University)
Professor
Plant biology; climate change

Research Faculty

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

Secondary Faculty

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)
Professor, Department of Anatomy, School of Medicine
Hominin paleontology and fieldwork; hominid dentition; locomotor capacities of early *Homo erectus*

Peter Thomas, PhD
(University of Chicago)
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

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

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

Michael P. Donovan, PhD
(Pennsylvania State University)
Adjunct Assistant Professor; Senior Collections Manager of Paleobotany and Paleocology, Cleveland Museum of Natural History
Paleobotany; evolution and ecology of plant-insect interactions

Noah T. Dunham, PhD
(Ohio State University)
Adjunct Assistant Professor; Research Curator, Cleveland Metroparks Zoo
Primate behavior; nutritional ecology; locomotor kinematics

Elliot M. Gardner, PhD, JD
(Northwestern University and Chicago Botanic Garden; Benjamin N. Cardozo School of Law)
Adjunct Assistant Professor
Plant systematics; phylogenetics; ethnobotany; pollination biology and chemical ecology; flora of Southeast Asia

Nicole L. Gunter, PhD
(University of Queensland, Australia)
Adjunct Assistant Professor; Collections Manager, Department of Invertebrate Zoology, Cleveland Museum of Natural History
Phylogenetics and systematics of dung beetles

Yohannes Haile-Selassie, PhD
(University of California, Berkeley)
Adjunct Professor; Curator/Head, Department of Physical Anthropology, Cleveland Museum of Natural History
Hominin paleobiology; Plio-Miocene mammalian evolution; paleobiogeography; paleoecology

Andrew W. Jones, PhD
(University of Minnesota)
Adjunct Assistant Professor; William A. and Nancy R. Klamm Chair and Curator of Ornithology, Cleveland Museum of Natural History
Evolution and migration of birds

Diana C. Koester, PhD
(George Mason University)
Adjunct Assistant Professor; Research Curator, Cleveland Metroparks Zoo
Wildlife endocrinology; reproductive physiology; animal welfare

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

Polly J. Mason, PhD
(Saint Louis University)
Adjunct Instructor
Cell and molecular biology; genetics and cancer biology

Juliana S. Medeiros, PhD
(University of New Mexico)
Adjunct Assistant Professor; Scientist, Holden Arboretum
Plant physiological ecology; evolutionary ecology; acclimation and adaptation to the abiotic environment; carbon and water relations

Katherine L. Stuble, PhD
(University of Tennessee)
Adjunct Assistant Professor; Scientist, Holden Arboretum
Plant community ecology, plant insect interactions

Denise F. Su, PhD
(New York University)
Adjunct Assistant Professor; Curator/Head, Department of Paleobotany and Paleocology, Cleveland Museum of Natural History
Paleoecology; human evolution; functional morphology

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

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

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

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

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, 30 hours for the Systems Biology BS. The Neuroscience BS requires at least 30 hours of biology and neuroscience courses. All degree programs have additional requirements for chemistry, mathematics, and physics. See below for details of degree-specific requirements.

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 exceptions of BIOL 388S Undergraduate Research - SAGES Capstone for the Biology BS degree, and either BIOL 388S Undergraduate Research - SAGES Capstone or NEUR 388S Undergraduate Research SAGES Capstone for the Neuroscience 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 388 Undergraduate Research or BIOL 388S Undergraduate Research - SAGES Capstone) sometime during the senior year.

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		3
BIOL 326	Genetics	3
One course from any two of the following three subject areas (breadth requirement)		6-8
Cell and molecular biology		
BIOL 303	From Blackbox to Toolbox: How Molecular Biology Moves Forward	
BIOL 316	Fundamental Immunology	
BIOL 324	Introduction to Stem Cell Biology	
BIOL 325	Cell Biology	
BIOL 328	Plant Genomics and Proteomics	
BIOL 329	Genome Dynamics	
BIOL 341	Basic Biology of Blood and Blood Diseases	
BIOL 342	Parasitology	
BIOL 343	Microbiology	
BIOL 365	Evo-Devo: Evolution of Body Plans and Pathologies	
Organismal biology		
BIOL 223	Vertebrate Biology (organismal elective or lab, not both)	
BIOL 302	Human Learning and the Brain	

BIOL 305	Herpetology (3-credit version, Fall 2020 and later only)	
BIOL 312	Introductory Plant Biology	
BIOL 318	Introductory Entomology (organismal elective or lab, not both)	
BIOL 322	Sensory Biology	
BIOL 333	The Human Microbiome	
BIOL 338	Ichthyology (organismal elective or lab, not both)	
BIOL 340	Human Physiology	
BIOL 346	Human Anatomy	
BIOL 362	Principles of Developmental Biology	
BIOL 373	Introduction to Neurobiology (organismal lecture or lab, not both)	
BIOL 374	Neurobiology of Behavior	
BIOL 379	Transformative Animal Models in Modern Biology	
Population biology and ecology		
BIOL 225	Evolution	
BIOL 307	Evolutionary Biology of the Invertebrates	
BIOL 336	Aquatic Biology	
BIOL 351	Principles of Ecology	
BIOL 358	Animal Behavior (population/ecology elective or lab, not both)	
BIOL 364	Research Methods in Evolutionary Biology	
BIOL 368	Topics in Evolutionary Biology	
Two additional laboratory courses (excluding BIOL 388, BIOL 388S, and BIOL 390)		4-8
BIOL 223	Vertebrate Biology (lab or organismal elective, not both)	
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 (4-credit version, Fall 2018 and earlier only)	
BIOL 305L	Herpetology Lab	
BIOL 309	Biology Field Studies	
BIOL 314	Taming the Tree of Life: Phylogenetic Comparative Methods-from Concept to Practical Application	
BIOL 315	Quantitative Biology Laboratory	
BIOL 318	Introductory Entomology (lab or population/ecology elective, not both)	
BIOL 321	Design and Analysis of Biological Experiments	
BIOL 327	Functional Genomics	

BIOL 338	Ichthyology (lab or organismal elective, not both)	
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 353	Ecophysiology of Global Change	
BIOL 358	Animal Behavior (lab or population/ecology elective, not both)	
BIOL 373	Introduction to Neurobiology (lab or organismal elective, not both)	
BIOL 397	Molecular Phylogenetics	
Biology electives (excluding 100-level courses, BIOL 240, and BIOL 390)		3-6
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
CHEM 223	Introductory Organic Chemistry I	3
or CHEM 323	Organic Chemistry I	
CHEM 224	Introductory Organic Chemistry II	3
or CHEM 324	Organic Chemistry II	
CHEM 233	Introductory Organic Chemistry Laboratory I	2
Physics core courses		
PHYS 115	Introductory Physics I	4
or PHYS 121	General Physics I - Mechanics	
PHYS 116	Introductory Physics II	4
or PHYS 122	General Physics II - Electricity and Magnetism	
Total Units		63-72

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

	Units	
	Fall	Spring
Genes, Evolution and Ecology (BIOL 214)	3	
Genes, Evolution and Ecology Lab (BIOL 214L)	1	
SAGES First Seminar	4	
PHED Physical Education	0	
Math and Calculus Applications for Life, Managerial, and Social Sci I (MATH 125) or Calculus for Science and Engineering I (MATH 121)	4	
Principles of Chemistry I (CHEM 105)	3	
Principles of Chemistry Laboratory (CHEM 113)		2

SAGES University Seminar	3	
Cells and Proteins (BIOL 215)	3	
Cells and Proteins Laboratory (BIOL 215L)	1	
PHED Physical Education	0	
Math and Calculus Applications for Life, Managerial, and Social Sci II (MATH 126) or Calculus for Science and Engineering II (MATH 122)	4	
Principles of Chemistry II (CHEM 106)	3	
Year Total:	15	16

	Units	
	Fall	Spring
Second Year		
Introductory Organic Chemistry I (CHEM 223) or Organic Chemistry I (CHEM 323)	3	
Introductory Organic Chemistry Laboratory I (CHEM 233)	2	
SAGES University Seminar	3	
GER Course	3	
Development and Physiology (BIOL 216)	3	
Development and Physiology Lab (BIOL 216L)	1	
Genetics (BIOL 326) (or BIOL Elective)		3
Introductory Organic Chemistry II (CHEM 224) or Organic Chemistry II (CHEM 324)		3
SAGES Departmental Seminar		3
GER Course		3
Open Elective		3
Year Total:	15	15

	Units	
	Fall	Spring
Third Year		
Genetics (BIOL 326)	3	
Introductory Physics I (PHYS 115) or General Physics I - Mechanics (PHYS 121)	4	
GER Course	3	
Open Elective or BIOL Elective	3	
BIOL Laboratory	2-4	
BIOL Elective		3
BIOL Laboratory		2-4
Introductory Physics II (PHYS 116) or General Physics II - Electricity and Magnetism (PHYS 122)		4
GER Course		3
Open Elective		3
Year Total:	15-17	15-17

	Units	
	Fall	Spring
Fourth Year		
BIOL Elective or SAGES Capstone	3	
Open Electives	12	
SAGES Capstone or BIOL Elective		3

BIOL Elective (if needed) or Open Elective	3
Open Electives	9
Year Total:	15 15
<hr/>	
Total Units in Sequence:	121-125

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 36 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

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
BIOL 223	Vertebrate Biology	3

Mathematics core courses

MATH 125	Math and Calculus Applications for Life, Managerial, and Social Sci I	4
MATH 126	Math and Calculus Applications for Life, Managerial, and Social Sci II	4

Chemistry core courses

CHEM 105	Principles of Chemistry I	3
CHEM 106	Principles of Chemistry II	3
CHEM 113	Principles of Chemistry Laboratory	2
CHEM 223	Introductory Organic Chemistry I	3
CHEM 224	Introductory Organic Chemistry II	3
CHEM 233	Introductory Organic Chemistry Laboratory I	2

Physics core courses

PHYS 115	Introductory Physics I	4
PHYS 116	Introductory Physics II	4

One of the following earth, environmental, and planetary sciences (EEPS) courses 3

EEPS 101	The Earth and Planets	
EEPS 110	Physical Geology	
EEPS 115	Introduction to Oceanography	
EEPS 117	Weather and Climate	

One of the following genetics, cell and molecular biology, or microbiology courses 3-4

BIOL 326	Genetics	
BIOL 343	Microbiology	
BIOL 362	Principles of Developmental Biology	

One of the following genetics, cell and molecular biology, or microbiology courses 2-3

BIOL 301	Biotechnology Laboratory: Genes and Genetic Engineering	
BIOL 344	Laboratory for Microbiology	
BIOL 362	Principles of Developmental Biology	
One of the following behavior courses		3-4
BIOL 358	Animal Behavior	
BIOL 373	Introduction to Neurobiology	
BIOL 374	Neurobiology of Behavior	
One of the following zoology or ecology courses		3-4
BIOL 305	Herpetology	
BIOL 318	Introductory Entomology	
BIOL 336	Aquatic Biology	
BIOL 338	Ichthyology	
BIOL 351	Principles of Ecology	
Total Units		61-65

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

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 3

BIOL 326	Genetics	3
----------	----------	---

One course from any two of the following three subject areas (breadth requirement) 6-8

Cell and molecular biology		
BIOL 303	From Blackbox to Toolbox: How Molecular Biology Moves Forward	
BIOL 316	Fundamental Immunology	
BIOL 324	Introduction to Stem Cell Biology	
BIOL 325	Cell Biology	
BIOL 328	Plant Genomics and Proteomics	
BIOL 329	Genome Dynamics	
BIOL 341	Basic Biology of Blood and Blood Diseases	
BIOL 342	Parasitology	
BIOL 343	Microbiology	

BIOL 365	Evo-Devo:Evolution of Body Plans and Pathologies	
Organismal biology		
BIOL 223	Vertebrate Biology (organismal elective or lab, not both)	
BIOL 302	Human Learning and the Brain	
BIOL 312	Introductory Plant Biology	
BIOL 305	Herpetology (3-credit version, Fall 2020 and later only)	
BIOL 318	Introductory Entomology (organismal elective or lab, not both)	
BIOL 322	Sensory Biology	
BIOL 333	The Human Microbiome	
BIOL 338	Ichthyology (organismal elective or lab, not both)	
BIOL 340	Human Physiology	
BIOL 346	Human Anatomy	
BIOL 362	Principles of Developmental Biology	
BIOL 373	Introduction to Neurobiology (organismal elective or lab, not both)	
BIOL 374	Neurobiology of Behavior	
BIOL 379	Transformative Animal Models in Modern Biology	
Population biology and ecology		
BIOL 225	Evolution	
BIOL 307	Evolutionary Biology of the Invertebrates	
BIOL 336	Aquatic Biology	
BIOL 351	Principles of Ecology	
BIOL 358	Animal Behavior (population/ecology elective or lab, not both)	
BIOL 364	Research Methods in Evolutionary Biology	
BIOL 368	Topics in Evolutionary Biology	
One quantitative biology laboratory course		3-4
BIOL 300	Dynamics of Biological Systems: A Quantitative Introduction to Biology	
BIOL 304	Fitting Models to Data: Maximum Likelihood Methods and Model Selection	
BIOL 315	Quantitative Biology Laboratory	
BIOL 321	Design and Analysis of Biological Experiments	
BIOL 327	Functional Genomics	
BIOL 352	Ecology and Evolution of Infectious Diseases	
BIOL 373	Introduction to Neurobiology (quant lab or organismal elective, not both)	
BIOL 397	Molecular Phylogenetics	
One additional laboratory course (excluding BIOL 388, BIOL 388S, and BIOL 390)		2-4
Any quantitative laboratory course		
BIOL 223	Vertebrate Biology (lab or organismal elective, not both)	
BIOL 301	Biotechnology Laboratory: Genes and Genetic Engineering	
BIOL 305	Herpetology (4-credit version, Fall 2018 and earlier only)	
BIOL 305L	Herpetology Lab	
BIOL 309	Biology Field Studies	
BIOL 314	Taming the Tree of Life: Phylogenetic Comparative Methods-from Concept to Practical Application	
BIOL 318	Introductory Entomology (lab or organismal elective, not both)	
BIOL 338	Ichthyology (lab or organismal elective, not both)	
BIOL 339	Aquatic Biology Laboratory	
BIOL 344	Laboratory for Microbiology	
BIOL 345	Mammal Diversity and Evolution	
BIOL 351L	Principles of Ecology Laboratory	
BIOL 353	Ecophysiology of Global Change	
BIOL 358	Animal Behavior (lab or population/ecology elective, not both)	
Biology electives (excluding 100-level courses and BIOL 240)		3-6
Undergraduate research		6
BIOL 388S	Undergraduate Research - SAGES Capstone	3
BIOL 390	Advanced Undergraduate Research (must be for 3 credits)	1 - 3
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
CHEM 223	Introductory Organic Chemistry I	3
or CHEM 323	Organic Chemistry I	
CHEM 224	Introductory Organic Chemistry II	3
or CHEM 324	Organic Chemistry II	
CHEM 233	Introductory Organic Chemistry Laboratory I	2
CHEM 301	Introductory Physical Chemistry I	3
Physics core courses		
PHYS 115	Introductory Physics I	4
or PHYS 121	General Physics I - Mechanics	
PHYS 116	Introductory Physics II	4
or PHYS 122	General Physics II - Electricity and Magnetism	
One advanced mathematics or statistics course		3

MATH 201	Introduction to Linear Algebra for Applications	
MATH 304	Discrete Mathematics	
STAT 312	Basic Statistics for Engineering and Science	
or STAT 312R	Basic Statistics for Engineering and Science Using R Programming	
One computer programming course		3
ENGR 131	Elementary Computer Programming	3
Total Units		86-96

At least 11 hours of the selected electives and additional laboratory courses must be at the 300 level or higher.

BS Biology, Suggested Sequence of Courses

First Year

	Units	
	Fall	Spring
Genes, Evolution and Ecology (BIOL 214)	3	
Genes, Evolution and Ecology Lab (BIOL 214L)	1	
Math and Calculus Applications for Life, Managerial, and Social Sci I (MATH 125) or Calculus for Science and Engineering I (MATH 121)	4	
Principles of Chemistry I (CHEM 105)	3	
SAGES First Seminar	4	
PHED Physical Education	0	
Cells and Proteins (BIOL 215)		3
Cells and Proteins Laboratory (BIOL 215L)		1
Math and Calculus Applications for Life, Managerial, and Social Sci II (MATH 126) or Calculus for Science and Engineering II (MATH 122)		4
Principles of Chemistry II (CHEM 106)		3
Principles of Chemistry Laboratory (CHEM 113)		2
SAGES University Seminar		3
PHED Physical Education		0
Year Total:	15	16

Second Year

	Units	
	Fall	Spring
Development and Physiology (BIOL 216)	3	
Development and Physiology Lab (BIOL 216L)	1	
Introductory Organic Chemistry I (CHEM 223) or Organic Chemistry I (CHEM 323)	3	
Introductory Organic Chemistry Laboratory I (CHEM 233)	2	
SAGES University Seminar	3	
GER Course	3	
Genetics (BIOL 326)		3
Introductory Organic Chemistry II (CHEM 224) or Organic Chemistry II (CHEM 324)		3
Elementary Computer Programming (ENGR 131)		3
Open Elective		3
GER Course		3
Year Total:	15	15

Third Year

	Units	
	Fall	Spring
BIOL Elective	3	
BIOL Elective	2-4	
or BIOL Laboratory		
Advanced Mathematics or Statistics Course	3	
Introductory Physics I (PHYS 115) or General Physics I - Mechanics (PHYS 121)	4	
GER Course	3	
BIOL Elective		3
Quantitative BIOL Laboratory or other BIOL Laboratory		3-4
Introductory Physics II (PHYS 116) or General Physics II - Electricity and Magnetism (PHYS 122)		4
SAGES Departmental Seminar		3
GER Course		3
Year Total:	15-17	16-17

Fourth Year

	Units	
	Fall	Spring
Undergraduate Research - SAGES Capstone (BIOL 388S) (SAGES Capstone)	3	
BIOL Elective	3	
BIOL Laboratory or Quantitative BIOL Laboratory (if needed)	2-4	
Introductory Physical Chemistry I (CHEM 301)	3	
Open Elective	3	
Advanced Undergraduate Research (BIOL 390)		3
BIOL Elective		3
BIOL Elective (if needed) or Open Elective		3
Open Electives		6
Year Total:	14-16	15

Total Units in Sequence: 121-126

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 strongly recommended (as BIOL 388S Undergraduate Research - SAGES Capstone and BIOL 390 Advanced Undergraduate Research), but is not formally required.

Systems Biology core courses

BIOL 214	Genes, Evolution and Ecology	3
BIOL 215	Cells and Proteins	3
BIOL 216	Development and Physiology	3
BIOL 300	Dynamics of Biological Systems: A Quantitative Introduction to Biology	3
BIOL 306	Mathematical Analysis of Biological Models	3

Approved subspecialty sequence (choose one of the following four sequences) 6-8

Neuroscience (any two courses)

BIOL 322	Sensory Biology	
BIOL 373	Introduction to Neurobiology	
BIOL 374	Neurobiology of Behavior	
BIOL 378 or MATH 378	Computational Neuroscience	
NEUR 402	Principles of Neural Science	

Bioinformatics and genetics (any two courses)

BIOL 301	Biotechnology Laboratory: Genes and Genetic Engineering	
BIOL 311A & BIOL 311B & BIOL 311C	Survey of Bioinformatics: Technologies in Bioinformatics and Survey of Bioinformatics: Data Integration in Bioinformatics and Survey of Bioinformatics: Translational Bioinformatics	
or SYBB 311A & SYBB 311B & SYBB 311C	Survey of Bioinformatics: Technologies in Bioinformatics and Survey of Bioinformatics: Data Integration in Bioinformatics and Survey of Bioinformatics: Translational Bioinformatics	
BIOL 326	Genetics	
BIOL 327	Functional Genomics	
BIOL 328	Plant Genomics and Proteomics	
BIOL 397	Molecular Phylogenetics	
CSDS 458	Introduction to Bioinformatics (formerly EECS 458)	
CSDS 459	Bioinformatics for Systems Biology (formerly EECS 459)	

Ecology and evolutionary biology (any two courses)

BIOL 305	Herpetology	
BIOL 307	Evolutionary Biology of the Invertebrates	
BIOL 318	Introductory Entomology	
BIOL 336	Aquatic Biology	
BIOL 338	Ichthyology	
BIOL 345	Mammal Diversity and Evolution	
BIOL 351	Principles of Ecology	
BIOL 353	Ecophysiology of Global Change	
BIOL 358	Animal Behavior	
BIOL 364	Research Methods in Evolutionary Biology	
BIOL 365	Evo-Devo: Evolution of Body Plans and Pathologies	

BIOL 368	Topics in Evolutionary Biology	
BIOL 471	Foundations of Advanced Ecology	
BIOL 472	Foundations of Advanced Evolution	
Cellular and molecular biology (any two courses)		
BIOL 316	Fundamental Immunology	
BIOL 324	Introduction to Stem Cell Biology	
BIOL 325	Cell Biology	
BIOL 333	The Human Microbiome	
BIOL 342	Parasitology	
BIOL 343	Microbiology	
BIOL 344	Laboratory for Microbiology	
BIOL 362	Principles of Developmental Biology	
BIOL 365	Evo-Devo: Evolution of Body Plans and Pathologies	

BIOL Electives (excluding 100-level courses and BIOL 240) 12
(Undergraduate research strongly recommended)

BIOL 388S & BIOL 390	Undergraduate Research - SAGES Capstone 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
or STAT 312R	Basic Statistics for Engineering and Science Using R Programming	

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

ECSE 132	Introduction to Programming in Java (formerly EECS 132)	3
or CSDS 132	Introduction to Programming in Java	
ECSE 233	Introduction to Data Structures (formerly EECS 233)	4
or CSDS 233	Introduction to Data Structures	

Systems Electives (any two courses) 6-7

BIOL 304	Fitting Models to Data: Maximum Likelihood Methods and Model Selection
BIOL 319 or MATH 319	Applied Probability and Stochastic Processes for Biology Applied Probability and Stochastic Processes for Biology
BIOL 321	Design and Analysis of Biological Experiments
BIOL 378 or MATH 378	Computational Neuroscience Computational Neuroscience
CSDS 310N	Algorithms (formerly EECS 340)
CSDS 341N	Introduction to Database Systems (formerly EECS 341)
CSDS 391	Introduction to Artificial Intelligence (formerly EECS 391)
EBME 308	Biomedical Signals and Systems
EBME 309	Modeling of Biomedical Systems
ECSE 246	Signals and Systems (formerly EECS 246)
ECSE 313	Signal Processing (formerly EECS 313)
ECSE 324	Modeling and Simulation of Continuous Dynamical Systems (formerly EECS 324)
ECSE 346	Engineering Optimization (formerly EECS 346)
MATH 201	Introduction to Linear Algebra for Applications
MATH 330	Introduction of Scientific Computing
MATH 333	Mathematics and Brain
MATH 338	Introduction to Dynamical Systems
MATH 380	Introduction to Probability
MATH 394	Introduction to Information Theory
STAT 325	Data Analysis and Linear Models
STAT 326	Multivariate Analysis and Data Mining
STAT 332	Statistics for Signal Processing
STAT 437	Stochastic Models: Time Series and Markov Chains
STAT 538	Stochastic Models: Diffusive Phenomena and Stochastic Differential Equations
<hr/>	
Total Units	79-82

Systems Biology - Suggested Sequence of Courses

Computer science-oriented students are recommended to take ECSE 132 before the PHYS 121 / PHYS 122 sequence. Other students may take physics first. The schedule below shows both options.

First Year	Units	
	Fall	Spring
Genes, Evolution and Ecology (BIOL 214)	3	
Calculus for Science and Engineering I (MATH 121)	4	
Principles of Chemistry I (CHEM 105)	3	
Principles of Chemistry Laboratory (CHEM 113)	2	

SAGES First Seminar	4	
PHED Physical Education	0	
Cells and Proteins (BIOL 215)		3
Calculus for Science and Engineering II (MATH 122) or Calculus II (MATH 124)		4
Principles of Chemistry II (CHEM 106)		3
Open elective		3
SAGES University Seminar		3
PHED Physical Education		0
Year Total:	16	16

Second Year

	Units	
	Fall	Spring
Development and Physiology (BIOL 216)	3	
General Physics I - Mechanics (PHYS 121) or Introduction to Programming in Java (ECSE 132)	3-4	
Calculus for Science and Engineering III (MATH 223) or Calculus III (MATH 227)	3	
SAGES University Seminar	3	
GER Course	3	
Dynamics of Biological Systems: A Quantitative Introduction to Biology (BIOL 300)		3
General Physics II - Electricity and Magnetism (PHYS 122) or General Physics I - Mechanics (PHYS 121)		4
Elementary Differential Equations (MATH 224) or Differential Equations (MATH 228)		3
Open Elective		3
GER Course		3
Year Total:	15-16	16

Third Year

	Units	
	Fall	Spring
Mathematical Analysis of Biological Models (BIOL 306)	3	
Discrete Mathematics (MATH 304) or Discrete Mathematics (CSDS 302)	3	
BIOL Elective	3	
Introduction to Programming in Java (ECSE 132)	3	
GER Course	3	
Basic Statistics for Engineering and Science (STAT 312) or Basic Statistics for Engineering and Science Using R Programming (STAT 312R)		3
Introduction to Data Structures (ECSE 233)		4
BIOL Elective		3
SAGES Departmental Seminar		3
GER Course		3
Year Total:	15	16

Fourth Year

	Units	
	Fall	Spring
SAGES Capstone	3	

Undergraduate Research - SAGES Capstone (BIOL 388S) (recommended)		
Subspecialty Elective	3	
Systems Elective	3	
Open Electives	6	
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	15
<hr/>		
Total Units in Sequence:		124-125

Bachelor of Science in Neuroscience

Neuroscience is the study of the structure and function of the nervous system at the molecular, cellular, and systems levels, as well as how the nervous system controls cognition, emotions, and behavior. The BS in Neuroscience provides both breadth and depth of understanding of these topics, and equips students to pursue multiple career paths. The field of neuroscience is both interdisciplinary and multidisciplinary, using concepts and methods from biology, biophysics, chemistry, cognitive science, computer science, engineering, physiology, and psychology. The BS in Neuroscience allows students who are interested in nervous system structure and function to explore this area from multiple perspectives. Two semesters of independent research are required (including the SAGES Capstone, BIOL 388S Undergraduate Research - SAGES Capstone or NEUR 388S Undergraduate Research SAGES Capstone).

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

Neuroscience core courses

NEUR 166	Explorations in Neuroscience	1
NEUR 201	Fundamentals of Neuroscience I	3
NEUR 202	Fundamentals of Neuroscience II	3

Mathematics and Statistics core courses

MATH 125	Math and Calculus Applications for Life, Managerial, and Social Sci I	4
MATH 126	Math and Calculus Applications for Life, Managerial, and Social Sci II	4
STAT 312	Basic Statistics for Engineering and Science	3
or STAT 313	Statistics for Experimenters	

Chemistry core courses

CHEM 105	Principles of Chemistry I	3
CHEM 106	Principles of Chemistry II	3

CHEM 113	Principles of Chemistry Laboratory	2
CHEM 223	Introductory Organic Chemistry I	3
CHEM 224	Introductory Organic Chemistry II	3
CHEM 233	Introductory Organic Chemistry Laboratory I	2

Physics core courses

PHYS 115	Introductory Physics I	4
PHYS 116	Introductory Physics II	4

Computer programming core courses

ENGR 131	Elementary Computer Programming	3
BIOL 321	Design and Analysis of Biological Experiments	3

Neurobiology core (any two courses)

BIOL 322	Sensory Biology	
BIOL 358	Animal Behavior	
BIOL 373	Introduction to Neurobiology	
BIOL 374	Neurobiology of Behavior	
NEUR 301	Biological Mechanisms of Brain Disorders	
PSCL 350	Behavior Genetics	

One cellular/molecular biology course

BIOL 325	Cell Biology	
BIOL 326	Genetics	
BIOC 307	Introduction to Biochemistry: From Molecules To Medical Science	
CHEM 328	Introductory Biochemistry I	

One ecology/evolutionary biology course

BIOL 225	Evolution	
BIOL 351	Principles of Ecology	

Neuroscience electives (minimum two courses; at least one must be non-BIOL)

BIOL 302	Human Learning and the Brain	
or COGS 322	Human Learning and the Brain	
BIOL 378	Computational Neuroscience	
BIOL 385	Seminar on Biological Processes in Learning and Cognition	
COGS 102	Introduction to Cognitive Neuroscience	
COGS 201	Human Cognition in Evolution and Development	
COGS 305	Social Cognition and the Brain	
COSI 305	Neuroscience of Communication and Communication Disorders	
COSI 357	Acquired Neurogenic Communication Disorders	
MATH 333	Mathematics and Brain	
PHIL 311	Neuroethics	
PHIL 366	Brain, Mind and Consciousness: The Science and Philosophy of Mind	
PSCL 101	General Psychology I	
PSCL 352	Physiological Psychology	
PSCL 379	Neurodevelopmental Disabilities	

Undergraduate research (minimum 6 credits)

BIOL 388	Undergraduate Research
or NEUR 388	Undergraduate Research
BIOL 388S	Undergraduate Research - SAGES Capstone
or NEUR 388S	Undergraduate Research SAGES Capstone
BIOL 390	Advanced Undergraduate Research
or NEUR 390	Advanced Undergraduate Research in Neuroscience

Neuroscience - Suggested Sequence of Courses

First Year	Units	
	Fall	Spring
SAGES First Seminar	4	
Math and Calculus Applications for Life, Managerial, and Social Sci I (MATH 125)	4	
Principles of Chemistry I (CHEM 105)	3	
Explorations in Neuroscience (NEUR 166)	1	
Genes, Evolution and Ecology (BIOL 214)	3	
Genes, Evolution and Ecology Lab (BIOL 214L)	1	
PHED Physical Education	0	
SAGES University Seminar		3
Math and Calculus Applications for Life, Managerial, and Social Sci II (MATH 126)		4
Principles of Chemistry II (CHEM 106)		3
Principles of Chemistry Laboratory (CHEM 113)		2
Cells and Proteins (BIOL 215)		3
Cells and Proteins Laboratory (BIOL 215L)		1
PHED Physical Education		0
Year Total:	16	16

Second Year	Units	
	Fall	Spring
Development and Physiology (BIOL 216)	3	
Development and Physiology Lab (BIOL 216L)	1	
Introductory Organic Chemistry I (CHEM 223)	3	
Introductory Organic Chemistry Laboratory I (CHEM 233)	2	
Fundamentals of Neuroscience I (NEUR 201)	3	
SAGES University Seminar	3	
Fundamentals of Neuroscience II (NEUR 202)		3
Introductory Organic Chemistry II (CHEM 224)		3
GER Course		3
Cellular/Molecular Biology Elective or Ecology/Evolutionary Biology Elective		3
Open Elective		3
Year Total:	15	15

Third Year	Units	
	Fall	Spring
Cellular/Molecular Biology Elective or Ecology/Evolutionary Biology Elective	3	
Design and Analysis of Biological Experiments (BIOL 321) or Elementary Computer Programming (ENGR 131)	3	

Introductory Physics I (PHYS 115)	4	
Neurobiology Core Course or Neurobiology Elective	3	
Open Elective or GER Course	3	
Neurobiology Elective Course or Neurobiology Core Course	3	
SAGES Departmental Seminar	3	
Introductory Physics II (PHYS 116)	4	
Elementary Computer Programming (ENGR 131) or Basic Statistics for Engineering and Science (STAT 312) or Open Elective	3	
Open Elective or GER Course	3	
Year Total:	16	16

Fourth Year	Units	
	Fall	Spring
Undergraduate Research - SAGES Capstone (BIOL 388S) (SAGES Capstone) or Undergraduate Research SAGES Capstone (NEUR 388S) Neuroscience Elective or Neurobiology Core Course	3	
Basic Statistics for Engineering and Science (STAT 312) or Open Elective	3	
Open Elective	3	
Open Elective	3	
Advanced Undergraduate Research (BIOL 390) or Advanced Undergraduate Research in Neuroscience (NEUR 390) Neuroscience Elective or Neurobiology Core Course		3
Open Elective		3
Open Elective		3
Open Elective		3
Year Total:	15	15

Total Units in Sequence: 124

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

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.

Minor

The biology minor requires 16 credits of biology courses. Students must take 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) 8

BIOL 214 & 214L	Genes, Evolution and Ecology and Genes, Evolution and Ecology Lab	
BIOL 215 & 215L	Cells and Proteins and Cells and Proteins Laboratory	
BIOL 216 & 216L	Development and Physiology and Development and Physiology Lab	
BIOL electives (excluding 100-level courses, BIOL 240, and BIOL 390)		8
Total Units		16

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 27 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 Master of Science degree in Biology. The EB program includes four 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 and defend 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 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 of Science degree should consult the regulations for the Plan B Master of Science 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.

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 start-up, 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 passing a comprehensive oral examination.

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 (up to 3 credits of BIOL 599 Advanced Independent Study for Graduate Students and up to 3 credits of BIOL 601 Research). BIOL 599 requires 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 two-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.

Courses

BIOL 112. Biology's Survival Guide to College: How stress impacts a student's ability to thrive. 3 Units.

Stress can test the limit of an individual's ability to maintain balance, thrive and survive. This non-majors biology course explores how cells, organs and organ systems work together to maintain homeostasis. Equipped with knowledge of how the body functions, students will explore how common stressors experienced by college students (sleep deprivation, lack of relaxation, poor diet, and others) can test the limits of maintaining homeostasis. Understanding the body's stress response and how stress impacts well-being will enable students to make informed decisions about how to promote balance in their own life.

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 340, or BIOL 346. This course does not count toward any Biology degree. Prereq or Coreq: (Undergraduate Student and BIOL 114) or Requisites Not Met Permission.

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 340, or BIOL 346. This course does not count toward any Biology degree. Prereq: (Undergraduate Student and BIOL 114 and BIOL 116) or Requisites Not Met Permission.

BIOL 214. Genes, Evolution and Ecology. 3 Units.

First in a series of three courses required 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: (Undergraduate Student and CHEM 105 or CHEM 111) or Requisites Not Met permission.

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: (Undergraduate Student and BIOL 214) or Requisites Not Met permission.

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. Requirements to enroll: 1) Undergraduate degree seeking student; AND 2) Previous enrollment in BIOL 214 and (CHEM 105 or CHEM 111); AND Previous or concurrent enrollment in CHEM 106 or ENGR 145; OR Requisites Not Met permission.

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. Prereq: (Undergraduate Student and BIOL 214L and Prereq or Coreq: BIOL 215) or Requisites Not Met permission.

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 section 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: (Undergraduate Student and BIOL 214) or Requisites Not Met permission.

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: (Undergraduate Student and BIOL 214L and Prereq or Coreq: BIOL 216) or Requisites Not Met permission.

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. Prereq: Undergraduate Student or Requisites Not Met permission.

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. Prereq: Undergraduate Student or Requisites Not Met permission

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. This course satisfies a laboratory requirement of the B.A. in Biology. This course satisfies an additional laboratory requirement of the B.S. in Biology. Offered as BIOL 301 and BIOL 401. Prereq: Undergraduate Student and BIOL 215 or Requisites Not Met permission.

BIOL 302. Human Learning and the Brain. 3 Units.

This course focuses on the question, "How does my brain learn and how can its learning best be facilitated?" Each student is required to develop a comprehensive theory about personal learning. These theories will take the form of a major paper which will be expanded and modified throughout the semester. Readings and class discussions will focus on the following topics: learning and education systems, major structures of the brain and their role in learning, neuronal wiring of the brain and how learning changes it, the emotional brain and its essential role in learning, language and the brain, the role of images in learning, memory and learning (and related pathologies, such as PTSD). Students are expected to incorporate information on these topics into their personal theory of learning. In so doing, students are expected to articulate meaningful questions, skillfully employ research and apply their own knowledge to address such questions, produce clear, precise academic prose to explicate their ideas, and provide relevant and constructive criticism during class discussions. Offered as BIOL 302 and COGS 322. Counts as SAGES Departmental Seminar. Prereq: Undergraduate Student or Requisites Not Met Permission.

BIOL 303. From Blackbox to Toolbox: How Molecular Biology Moves Forward. 3 Units.

The pioneers of modern biology knew very little about the internal workings of the cell, and they had access to only a very limited set of very low-resolution tools. Yet clean experimental design and careful analysis let them ask and answer fundamental biological questions and enabled the development of better tools to use the next time around. In just seven decades, biologists have built a toolbox that offers astonishing precision and power, but the logic of biological experimentation hasn't changed. In this course, we will study that underlying logic, and what it lets us do. We will read key papers spanning the development of modern biology, from the most basic working-out of the Central Dogma to recent advances. We will pay particular attention to how well the authors used the tools available, and how successfully they accounted for their shortcomings—if indeed they did. The emphasis of the course will be on classroom discussion. In lieu of exams, students will (1) write brief responses to weekly in-class prompts for understanding, (2) write in-depth proposals for a molecular biology research project, and (3) present their proposals orally to the class. These assignments are designed to check that students are keeping up with weekly discussions and synthesizing what they have learned into a deeper understanding of how we develop questions and construct arguments in biological research. This course is offered as a SAGES departmental seminar and fulfills the Cell and Molecular breadth requirement of the B.A. and B.S. in Biology. Counts as SAGES Departmental Seminar. Prereq: Undergraduate Student and BIOL 215 or Requisites Not Met permission.

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: (Undergraduate Student and MATH 121 and MATH 122) or (Undergraduate Student and MATH 125 and MATH 126) or Requisites Not Met permission.

BIOL 305. Herpetology. 3 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. The graduate version of the course requires a research project and term paper. This course satisfies the Organismal breadth requirement of the B.A. and B.S. in Biology. Offered as BIOL 305 and BIOL 405. Prereq: Undergraduate Student and BIOL 214 or Requisites Not Met permission.

BIOL 305L. Herpetology Lab. 2 Units.

This course will combine field and laboratory sessions to investigate the diversity and biology of reptiles and amphibians. Topics covered will include identification and classification, field research techniques, experimental design and statistical analysis, safe handling of live individuals and working with museum specimens. Laboratory sessions will include trips to the Squire Valleevue Farm, and may also include trips at the Cleveland Museum of Natural History and the Cleveland Metroparks Zoo. This course satisfies a laboratory requirement of the B.A. in Biology. This course satisfies an additional laboratory requirement of the B.S. in Biology. Prereq or Coreq: BIOL 305.

BIOL 306. Mathematical Analysis of Biological Models. 3 Units.

This course focuses on the mathematical methods used to analyze biological models, with examples drawn largely from ecology but also from epidemiology, developmental biology, and other areas. Mathematical topics include equilibrium and stability in discrete and continuous time, some aspects of transient dynamics, and reaction-diffusion equations (steady state, diffusive instabilities, and traveling waves). Biological topics include several "classic" models, such as the Lotka-Volterra model, the Ricker model, and Michaelis-Menten/type II/saturating responses. The emphasis is on approximations that lead to analytic solutions, not numerical analysis. An important aspect of this course is translating between verbal and mathematical descriptions: the goal is not just to solve mathematical problems but to extract biological meaning from the answers we find. Offered as BIOL 306 and MATH 376. Prereq: Undergraduate Student and (BIOL 300 or MATH 224 or MATH 228) or Requisites Not Met permission.

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 309. Biology Field Studies. 3 Units.

Intensive investigation of living organisms in a natural environment. Location of the field site may vary with each course offering, and may be either domestic or international. Topics covered include logistics, biodiversity, and current ecological, environmental, and social issues surrounding the specific ecosystem being studied. Time at the field site will be spent listening to resident lecturers, receiving guided tours, observing and identifying wild organisms in their natural habitat, and conducting a research project. The undergraduate version requires students to plan and conduct a group research project and present results independently. The graduate version requires students to plan, conduct, and present an independent research project. Instructor consent required to register. This course will fulfill a laboratory requirement of the B.A. in Biology. This course will fulfill an additional laboratory requirement of the B.S. in Biology. Course may be repeated for credit up to two times if traveling to a new destination. Offered as BIOL 309 and BIOL 409. Prereq: BIOL 216.

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 311A/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 311A/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 311A/411A), to data integration (SYBB 311B/411B), to research applications (SYBB 311C/411C), with a fourth module (SYBB 311D/411D) introducing basic programming skills. 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 SYBB 411D, which must be taken with SYBB 411A. Offered as SYBB 311A, BIOL 311A and SYBB 411A. Prereq: BIOL 214 and BIOL 215. Coreq: BIOL 311B and BIOL 311C.

BIOL 311B. Survey of Bioinformatics: Data Integration in Bioinformatics. 1 Unit.

SYBB 311B/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 311A/411A), to data integration (SYBB 311B/411B), to research applications (SYBB 311C/411C), with a fourth module (SYBB 311D/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 SYBB 411D, which must be taken with SYBB 411A. Offered as SYBB 311B, BIOL 311B, and SYBB 411B. Prereq: BIOL 214 and BIOL 215. Coreq: BIOL 311A and BIOL 311C.

BIOL 311C. Survey of Bioinformatics: Translational Bioinformatics. 1 Unit.

SYBB 311C/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 311A/411A), to data integration (SYBB 311B/411B), to research applications (SYBB 311C/411C), with a fourth module (SYBB 311D/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 SYBB 411D, which must be taken with SYBB 411A. Offered as SYBB 311C, BIOL 311C and SYBB 411C. Prereq: BIOL 214 and BIOL 215. Coreq: BIOL 311A and BIOL 311B.

BIOL 312. Introductory Plant Biology. 3 Units.

This course will provide an overview of plant biology. Topics covered will include: (1) Plant structure, function and development from the cellular level to the whole plant (2) plant diversity, evolution of the bacteria, fungi, algae, bryophytes and vascular plants; (3) adaptations to their environment, plant-animal interactions, and human uses of plants. Prereq: (Undergraduate student and BIOL 215) or Requisites Not Met permission.

BIOL 314. Taming the Tree of Life: Phylogenetic Comparative Methods- from Concept to Practical Application. 3 Units.

"Nothing in biology makes sense except in the light of evolution" – Dobzhansky Biologists have long been fascinated by the diversity of life. Why are there so many species? Why are some of them similar and others divergent? How has evolution shaped ecological interactions, such as disease-host dynamics? The "tree of life" describes phylogenetic hypotheses for evolutionary history among species, and modern phylogenetic comparative methods allow us to incorporate the tree of life into statistical analyses. This course will introduce phylogenetic comparative methods, why they are needed to answer many biological questions, how they are conducted, and how they can be used to evaluate hypotheses. These methods can be used for any group of organisms, from humans and their diseases, to plants, animals, or fungi. These methods also can be used to address a broad suite of questions in biology, including biomedical, ecological, evolutionary, developmental, and neuromechanical questions. For example, issues of public health can be more deeply addressed using these tools. Students may bring their own data sets, or may use existing data sets, and will develop an independent research project using these tools. Undergraduates will present a poster at a public poster fair, as part of the requirements for the SAGES capstone. No prior experience with the R statistics language is necessary for this course. BIOL314 fulfills the requirements for an undergraduate capstone in biology. Offered as BIOL 314 and BIOL 414. Counts as SAGES Senior Capstone. Prereq: (Undergraduate student with at least Junior standing and BIOL 214) or Requisite Not Met permission.

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: (Undergraduate Student and BIOL 214) or Requisites Not Met permission.

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. This course satisfies either the Organismal breadth requirement of the B.A. and B.S. in Biology, or the laboratory requirement of the B.A. in Biology, or an additional laboratory requirement of the B.S. in Biology. Offered as BIOL 318 and BIOL 418. Prereq: (Undergraduate Student and BIOL 214 and BIOL 215 and BIOL 216) or Requisites Not Met permission.

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, ECSE 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: Undergraduate Student and BIOL 216 or Requisites Not Met permission.

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: (Undergraduate Student and BIOL 216) or Requisites Not Met permission.

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: Undergraduate Student and (BIOL 325 or BIOL 326 or BIOL 362) or Requisites Not Met permission.

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 are the critical components of specific cellular processes and how are they regulated? An important part of this course will be appreciation of the experimental evidence that supports our current understanding of cell function. To achieve this aim, we will highlight a variety of experimental techniques currently used in research, and 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 with each other and their environment, intracellular signaling and cell death mechanisms. After establishing a detailed understanding of cell biology, we will explore how normal cellular processes go awry, leading to diseases such as cancer. This course fulfills the Cell and Molecular breadth requirement of the B.A. and B.S. in Biology. Prereq: (Undergraduate Student and BIOL 215) or Requisites Not Met permission.

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: (Undergraduate student and BIOL 214) or Requisites Not Met permission

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. A final project will consist of a research project formulated by a group of 2-3 students to test a hypothesis formulated by the students using the bioinformatics tools learned in the course. 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: Undergraduate Student and (BIOL 214L and BIOL 326) or Requisites Not Met permission.

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. Prereq: Undergraduate Student or Requisites Not Met permission.

BIOL 329. Genome Dynamics. 3 Units.

We will examine how the physical architecture of the genome facilitates a dynamic genome ecosystem. Topics will be selected from current research in the field, including: how the three dimensional architecture of chromosomes within the nucleus impacts information storage and retrieval, how biochemical phase separation impacts nucleic acid storage (including RNA), how structural features of chromosomes are critical for function, genome engineering approaches, and the clinical implications of mutations in the 3D nuclear architecture. Course materials will come from the primary research literature, supplemented with appropriate background material. This course fulfills the cell and molecular biology breadth requirement of the BA and BS in Biology. Counts as a SAGES Departmental Seminar. Offered as BIOL 329 and BIOL 429. Counts as SAGES Departmental Seminar. Prereq: Undergraduate Student and BIOL 326 or Requisites Not Met permission.

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. This class is offered as a SAGES Departmental Seminar and fulfills an Organismal breadth requirement of the BA and BS in Biology. Counts as SAGES Departmental Seminar. Prereq: (Undergraduate Student and BIOL 214 and BIOL 216) or Requisites Not Met Permission.

BIOL 336. Aquatic Biology. 3 Units.

Physical, chemical, and biological dynamics of lake ecosystems. Factors governing the distribution, abundance, and diversity of freshwater organisms. This course satisfies the Population Biology/Ecology breadth requirement of the B.A. and B.S. in Biology. Offered as BIOL 336 and BIOL 436. Prereq: Undergraduate Student and BIOL 214 or Requisites Not Met permission.

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: (Undergraduate Student and BIOL 216) or Requisites Not Met permission.

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. This course satisfies a laboratory requirement of the B.A. in Biology. This course satisfies an additional laboratory requirement of the B.S. in Biology. Prereq or Coreq: Undergraduate Student and BIOL 336 or Requisites Not Met permission.

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 BIOL 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: (Undergraduate Student and BIOL 346 and BIOL 215 and BIOL 216) or Requisites Not Met permission.

BIOL 341. Basic Biology of Blood and Blood Diseases. 3 Units.

This course incorporates biology, physiology, biochemistry, and pathology to understand how one of the most important tissues in the human body functions: blood. The course will investigate the normal flow of traffic in the body, as well as some of the biological diseases that hinder this flow. It will focus on understanding the basic and fundamental principles as it relates to biological and disease processes of blood. The course will apply scientific reasoning and critical thinking in investigating these processes. Additionally, it will explore the basic understanding of how scientific research in the area of hematology and oncology is conducted and how we apply laboratory discoveries towards treating blood-related disorders. Our focus will center upon examining the molecular mechanisms associated with bone marrow and several blood disorders. Specifically, we will study cancer (leukemia and lymphoma), anemia (sickle cell disease), blood coagulation (hemophilia and thrombosis), and atherosclerosis. Upon completion of this course, students will have gained the knowledge to apply basic biological concepts to larger, complex pathological diseases. This course fulfills the Cell & Molecular Breadth Requirement of the BA and BS in Biology. Prereq: Undergraduate Student and BIOL 214 or Requisites Not Met permission.

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 B.A. and B.S. degrees. Offered as BIOL 342 and BIOL 442. Prereq: (Undergraduate Student and BIOL 214, BIOL 215, BIOL 216 and BIOL 326) or Requisites Not Met permission.

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: (Undergraduate Student and BIOL 215) or Requisites Not Met permission.

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: (Undergraduate Student and BIOL 343) or Requisites Not Met permission.

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; (6) read and critique a scientific article dealing with mammal evolution. One weekend field trip to Cleveland Metroparks Zoo; additional individual and group visits to the Cleveland Museum of Natural History. This course satisfies a laboratory requirement for the biology major. Recommended preparation: BIOL 223 Vertebrate Biology, BIOL 225 Evolution, or BIOL 346 Human Anatomy. Offered as ANAT 445 and BIOL 345. Prereq: BIOL 214.

BIOL 346. Human Anatomy. 3 Units.

Gross anatomy of the human body. Two lectures and one laboratory demonstration per week. Prereq: (Undergraduate Student and BIOL 216) or Requisites Not Met permission.

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. This course satisfies the Population Biology/Ecology breadth requirement of the B.A. and B.S. in Biology. 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: Undergraduate Student and BIOL 214 or Requisites Not Met permission.

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. Offered as BIOL 351L and BIOL 451L. Prereq or Coreq: Undergraduate Student and BIOL 351 or Requisites Not Met permission.

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: (Undergraduate Student and BIOL 214 and (MATH 121 or MATH 125) and (MATH 122 or MATH 126)) or Requisites Not Met permission

BIOL 353. Ecophysiology of Global Change. 3 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: (Undergraduate Student and BIOL 214. Prereq or Coreq: BIOL 216) or Requisites Not Met Permission.

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: (Undergraduate Student and BIOL 214, BIOL 215 and BIOL 216) or Requisites Not Met permission.

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, BIOL 462 and ANAT 462. Prereq: Undergraduate Student and (BIOL 216 or (EBME 201 and EBME 202)) or Requisites Not Met Permission.

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: (Undergraduate Student and BIOL 214) or Requisites Not Met Permission.

BIOL 365. Evo-Devo: Evolution of Body Plans and Pathologies. 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 Medical Genetics. The course is structured into different modules. First we will look at the developmental genetic mechanisms that can cause variation and medical pathologies. 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 and congenital birth defects. We will conclude with two writing assignments. Students will be required to present, read, and discuss primary literature in each module. This course is offered as a SAGES Departmental Seminar and fulfills a Cell and Molecular breadth requirement of the BA and BS in Biology. Offered as BIOL 365 and BIOL 465. Counts as SAGES Departmental Seminar. Prereq: Undergraduate Student and (BIOL 225 or BIOL 326 or BIOL 362) or Requisites Not Met permission.

BIOL 368. 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: BIOL 225 or equivalent.

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 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 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 467, 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, CSDS 478, EBME 478, ECSE 478, MATH 478 and NEUR 478.

BIOL 379. Transformative Animal Models in Modern Biology. 3 Units.

Animal models are extremely important in the study of biology and in modern medicine. They allow us to determine fundamental biological mechanisms and cellular and molecular causes of disease. There is logic to how each animal model has found its place in the menagerie of accepted animal models. Certain animal models allow us to test particular hypotheses that may not be possible to address in other animals. Moreover, some animal models are more relevant than others to studying a particular human disease. This seminar-based course will focus on animal models that either are effective at modeling human disease, approach relevant neurobiological questions, or play a role in translational medicine. The course will focus on mammalian and non-mammalian animal models that are important to biomedical research, including the primate, mouse, zebrafish, and roundworm. Comparisons between popular animal models will be made. This course satisfies the Organismal breadth requirement of the B.A. and B.S. in Biology. Offered as BIOL 379 and BIOL 479. Counts as SAGES Departmental Seminar. Prereq: Undergraduate student and (BIOL 326 or BIOL 373) or Requisites Not Met permission.

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. This course satisfies the Population Biology/Ecology breadth requirement of the B.A. and B.S. in Biology. Counts as SAGES Departmental Seminar. Prereq: Undergraduate Student and BIOL 214 or Requisites Not Met permission.

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: Undergraduate Student and BIOL 302 or Requisites Not Met permission.

BIOL 388. Undergraduate Research. 1 - 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. 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 Units.

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 389S. Selected Topics in Biology--SAGES Capstone. 3 Units.

Individual library research projects under the guidance of a biology sponsor. A major paper must be submitted and approved before credit is awarded. A public presentation is required. Counts as SAGES Senior Capstone.

BIOL 390. Advanced Undergraduate Research. 1 - 3 Units.

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 30 hours required for a major in biology, but may be counted 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 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: Undergraduate Student and BIOL 214 and (BIOL 225 or BIOL 364) or Requisites Not Met permission.

BIOL 398. Modern Human Biological Variation. 3 Units.

The objectives of this course are to provide students with an introduction to human biological variation and to understand the variation within an evolutionary framework through lecture, readings, discussion, and labs. We will examine the patterns of morphological and genetic variation in modern human populations and discuss the evolutionary explanations for the observed patterns. In order to do this, we will first build a solid foundation in the scientific method, population genetics, and evolutionary theory before exploring the adaptive significance of the observed variation. A major component of the class will be the discussion of the social and health implications of these patterns of biological variation, particularly in the construction and application of the concept of race and its use in medicine. There are three units to the course. Unit 1 focuses on the fundamentals to understanding biological variation, we will cover basic population genetics, evolution, and the human fossil record. Unit 2 concentrates on surveying modern human biological variation, examining both morphological and genetic traits, and why these variations exist. Unit 3 examines how race is constructed using population-based biological differences, its validity, and the implications for health and medicine. This course fulfills the Population and Ecology breadth requirement of the B.A. and B.S. in Biology. Offered as BIOL 398 and BIOL 498. Prereq: Undergraduate Student and BIOL 214 or Requisites Not Met permission.

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. This course satisfies a laboratory requirement of the B.A. in Biology. This course satisfies an additional laboratory requirement of the B.S. in Biology. 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: C BIO 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 MATH 122 OR MATH 125 and MATH 126 or consent of instructor.

BIOL 405. Herpetology. 3 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. The graduate version of the course requires a research project and term paper. This course satisfies the Organismal breadth requirement of the B.A. and B.S. in Biology. Offered as BIOL 305 and BIOL 405.

BIOL 409. Biology Field Studies. 3 Units.

Intensive investigation of living organisms in a natural environment. Location of the field site may vary with each course offering, and may be either domestic or international. Topics covered include logistics, biodiversity, and current ecological, environmental, and social issues surrounding the specific ecosystem being studied. Time at the field site will be spent listening to resident lecturers, receiving guided tours, observing and identifying wild organisms in their natural habitat, and conducting a research project. The undergraduate version requires students to plan and conduct a group research project and present results independently. The graduate version requires students to plan, conduct, and present an independent research project. Instructor consent required to register. This course will fulfill a laboratory requirement of the B.A. in Biology. This course will fulfill an additional laboratory requirement of the B.S. in Biology. Course may be repeated for credit up to two times if traveling to a new destination. Offered as BIOL 309 and BIOL 409. Prereq: Graduate Standing.

BIOL 414. Taming the Tree of Life: Phylogenetic Comparative Methods-from Concept to Practical Application. 3 Units.

"Nothing in biology makes sense except in the light of evolution" -- Dobzhansky Biologists have long been fascinated by the diversity of life. Why are there so many species? Why are some of them similar and others divergent? How has evolution shaped ecological interactions, such as disease-host dynamics? The "tree of life" describes phylogenetic hypotheses for evolutionary history among species, and modern phylogenetic comparative methods allow us to incorporate the tree of life into statistical analyses. This course will introduce phylogenetic comparative methods, why they are needed to answer many biological questions, how they are conducted, and how they can be used to evaluate hypotheses. These methods can be used for any group of organisms, from humans and their diseases, to plants, animals, or fungi. These methods also can be used to address a broad suite of questions in biology, including biomedical, ecological, evolutionary, developmental, and neuromechanical questions. For example, issues of public health can be more deeply addressed using these tools. Students may bring their own data sets, or may use existing data sets, and will develop an independent research project using these tools. Undergraduates will present a poster at a public poster fair, as part of the requirements for the SAGES capstone. No prior experience with the R statistics language is necessary for this course. BIOL314 fulfills the requirements for an undergraduate capstone in biology. Offered as BIOL 314 and BIOL 414. Counts as SAGES Senior Capstone.

BIOL 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.

BIOL 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.

BIOL 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. Topics 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.

BIOL 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. This course satisfies either the Organismal breadth requirement of the B.A. and B.S. in Biology, or the laboratory requirement of the B.A. in Biology, or an additional laboratory requirement of the B.S. in Biology. Offered as BIOL 318 and BIOL 418. Prereq: BIOL 214, and BIOL 215, and BIOL 216.

BIOL 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, ECSE 319, MATH 319, SYBB 319, BIOL 419, EBME 419, MATH 419, PHOL 419, and SYBB 419.

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 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. A final project will consist of a research project formulated by a group of 2-3 students to test a hypothesis formulated by the students using the bioinformatics tools learned in the course. 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: 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 429. Genome Dynamics. 3 Units.

We will examine how the physical architecture of the genome facilitates a dynamic genome ecosystem. Topics will be selected from current research in the field, including: how the three dimensional architecture of chromosomes within the nucleus impacts information storage and retrieval, how biochemical phase separation impacts nucleic acid storage (including RNA), how structural features of chromosomes are critical for function, genome engineering approaches, and the clinical implications of mutations in the 3D nuclear architecture. Course materials will come from the primary research literature, supplemented with appropriate background material. This course fulfills the cell and molecular biology breadth requirement of the BA and BS in Biology. Counts as a SAGES Departmental Seminar. Offered as BIOL 329 and BIOL 429. Counts as SAGES Departmental Seminar.

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, PQHS 431 and MPHP 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, PQHS 432, CRSP 432 and MPHP 432. Prereq: PQHS/EPBI 431 or equivalent.

BIOL 436. Aquatic Biology. 3 Units.

Physical, chemical, and biological dynamics of lake ecosystems. Factors governing the distribution, abundance, and diversity of freshwater organisms. This course satisfies the Population Biology/Ecology breadth requirement of the B.A. and B.S. in Biology. 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 B.A. and B.S. 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 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. This course satisfies the Population Biology/Ecology breadth requirement of the B.A. and B.S. in Biology. 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 Valleevue 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. 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. 3 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 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 C3MB 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 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, BIOL 462 and ANAT 462.

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 and Pathologies. 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 Medical Genetics. The course is structured into different modules. First we will look at the developmental genetic mechanisms that can cause variation and medical pathologies. 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 and congenital birth defects. We will conclude with two writing assignments. Students will be required to present, read, and discuss primary literature in each module. This course is offered as a SAGES Departmental Seminar and fulfills a Cell and Molecular breadth requirement of the BA and BS in Biology. 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 467, 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 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, CSDS 478, EBME 478, ECSE 478, MATH 478 and NEUR 478.

BIOL 479. Transformative Animal Models in Modern Biology. 3 Units.

Animal models are extremely important in the study of biology and in modern medicine. They allow us to determine fundamental biological mechanisms and cellular and molecular causes of disease. There is logic to how each animal model has found its place in the menagerie of accepted animal models. Certain animal models allow us to test particular hypotheses that may not be possible to address in other animals. Moreover, some animal models are more relevant than others to studying a particular human disease. This seminar-based course will focus on animal models that either are effective at modeling human disease, approach relevant neurobiological questions, or play a role in translational medicine. The course will focus on mammalian and non-mammalian animal models that are important to biomedical research, including the primate, mouse, zebrafish, and roundworm. Comparisons between popular animal models will be made. This course satisfies the Organismal breadth requirement of the B.A. and B.S. in Biology. Offered as BIOL 379 and BIOL 479. Counts as SAGES Departmental Seminar. Prereq: Graduate Standing.

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); Hemorrhage, 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 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 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. This course satisfies a laboratory or quantitative laboratory requirement of the B.S. in Biology. Offered as: BIOL 397 and BIOL 497. Prereq: Graduate Standing.

BIOL 498. Modern Human Biological Variation. 3 Units.

The objectives of this course are to provide students with an introduction to human biological variation and to understand the variation within an evolutionary framework through lecture, readings, discussion, and labs. We will examine the patterns of morphological and genetic variation in modern human populations and discuss the evolutionary explanations for the observed patterns. In order to do this, we will first build a solid foundation in the scientific method, population genetics, and evolutionary theory before exploring the adaptive significance of the observed variation. A major component of the class will be the discussion of the social and health implications of these patterns of biological variation, particularly in the construction and application of the concept of race and its use in medicine. There are three units to the course. Unit 1 focuses on the fundamentals to understanding biological variation, we will cover basic population genetics, evolution, and the human fossil record. Unit 2 concentrates on surveying modern human biological variation, examining both morphological and genetic traits, and why these variations exist. Unit 3 examines how race is constructed using population-based biological differences, its validity, and the implications for health and medicine. This course fulfills the Population and Ecology breadth requirement of the B.A. and B.S. in Biology. Offered as BIOL 398 and BIOL 498. Prereq: Graduate Standing.

BIOL 549. Mathematical Life Sciences Seminar. 1 - 3 Units.

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 Units.

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 Units.**BIOL 651. Thesis M.S.. 1 - 9 Units.**

(Credit as arranged.)

BIOL 701. Dissertation Ph.D.. 1 - 9 Units.

(Credit as arranged.) Prereq: Predoctoral research consent or advanced to Ph.D. candidacy milestone.

Department of Chemistry

212 Clapp Hall

chemistry.case.edu (<http://chemistry.case.edu>)

Phone: 216.368.3622; Fax: 216.368.3006

Gregory P. Tochtrop, Department Chair

gregory.tochtrop@case.edu

The Department of Chemistry is the largest department representing the chemical sciences at Case Western Reserve University. It consists of 19 faculty members, 15 associated faculty, about 5 postdoctoral associates, approximately 60 graduate students, and over 100 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, (2) employing this knowledge in the design, synthesis, and characterization of materials with novel and useful properties, and (3) using chemical perspectives and tools to better understand biological systems. 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 500-MHz NMR spectrometers and ultrafast laser systems in both the Center for Chemical Dynamics and the newly established Ultrafast Laser 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.

Primary Faculty

Gregory P. Tochtrop, PhD
(Washington University Medical School)

Professor and Chair

Biochemistry, biophysical chemistry, chemical biology, medicinal chemistry, organic chemistry, bioorganic chemistry, synthesis

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

Carlos E. Crespo-Hernández, PhD
(University of Puerto Rico)

Professor

Analytical chemistry, biophysical chemistry, energy, photochemistry, physical chemistry, chemical dynamics and kinetics, computational chemistry, environmental chemistry, time-resolved spectroscopy

Thomas G. Gray, PhD

(Harvard University)

Professor

Organometallic chemistry, inorganic chemistry, energy

Irene Lee, PhD

(Pennsylvania State University)

Professor

Biochemistry, medicinal chemistry, bioorganic chemistry

Fu-Sen Liang, PhD

(The Scripps Research Institute)

Associate Professor

Bioorganic chemistry

Drew A. Meyer, PhD

(Stanford University)

John Teagle Professorial Fellow in Chemistry; Senior Instructor

Physical chemistry, inorganic chemistry, X-ray spectroscopy, chemical education

Shane M. Parker, PhD

(Northwestern University)

Assistant Professor

Computational and theoretical chemistry

Anthony J. Pearson, PhD

(University of Aston, Birmingham, England)

Rudolph and Susan Rense Professor of Chemistry

Organic chemistry, organometallic chemistry, catalysis, natural products, synthesis

John D. Protasiewicz, PhD

(Cornell University)

Hurlbut Professor of Chemistry

Inorganic chemistry, materials and energy, organometallic chemistry, photochemistry, catalysis, computational chemistry, crystallography, electrochemistry, green chemistry, main group chemistry, molecular electronics, nanotechnology, OLEDs, optoelectronics, physical organic chemistry, polymers, solar energy, solid-state chemistry, spectroscopy, supramolecular chemistry, synthesis

Robert G. Salomon, PhD

(University of Wisconsin, Madison)

Charles Frederic Mabery Professor of Research in Chemistry

Biochemistry, chemical biology, medicinal chemistry, organic chemistry, bioorganic chemistry, cellular biology, molecular biology, natural products, pharmacology, synthesis

Anna C. Samia, PhD

(Georgia Institute of Technology)

Associate Professor

Analytical chemistry, inorganic chemistry, materials and energy, bioinorganic chemistry, functional nanomaterials, nanotheranostics

Geneviève Sauvé, PhD

(California Institute of Technology)

Associate Professor

Materials and energy, organic chemistry, physical chemistry, functional polymers, nanoscale morphology, organic electronics, solar energy conversion, structure-property relationships

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

Blanton S. Tolbert, PhD

(University of Rochester)

Professor

Biochemistry, biophysical chemistry, structural biology

Michael G. Zagorski, PhD

(Case Western Reserve University)

Professor

Biochemistry, biophysical chemistry, chemical biology, organic chemistry, beer brewing, bioorganic chemistry, drug delivery, NMR, structural biology

Lecturers

Krista Cunningham, PhD

(The Ohio State University)

Full-time Lecturer

Organic chemistry, chemical education

Benjamin Sturtz, PhD

(Case Western Reserve University)

Full-time Lecturer

Inorganic Chemistry

Research Faculty

Mikhail D. Linetsky, PhD

(Academy of Science of Ukraine)

Research 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

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

Burcu Gurkan, PhD
(University of Notre Dame)
Assistant Professor, Chemical Engineering
Chemical Engineering

Thomas Kelley, PhD
(University of Notre Dame)
Associate Professor, Division of Pediatric Pulmonology
Biochemistry, medicinal chemistry, cellular biology, pharmacology

Lydia Kisley, PhD
(Rice University)
Assistant Professor, Department of Physics
Experimental biophysics, soft condensed matter physics, microscopy, interfacial/surface science, nanoscience, physical chemistry/chemical physics, signal processing, image analysis

Witold K. Surewicz, PhD
(University of Lodz, Poland)
Professor, Department of Physiology and Biophysics
Biochemistry, biophysical chemistry, neurochemistry, spectroscopy

Yanming Wang, PhD
(Federal Institute of Technology, Zürich, Switzerland)
Associate Professor, Department of Radiology
Organic synthesis, molecular probes for in vivo imaging

Gary E. Wnek, PhD
(University of Massachusetts, Amherst)
The Joseph F. Toot, Jr., Professor of Engineering Professor, Macromolecular Science & Engineering
Polymeric biomaterials for drug delivery and regenerative medicine; nano- and micro-fiber fabrication; bio-mimicking approaches for polymer flammability mitigation; polymer packaging systems design; polyelectrolyte gels and elastomers; physiologically-mimicking macromolecular constructs with attention to primitive motile and irritable systems

Lei Zhu, PhD
(University of Akron)
Associate Professor, Department of Macromolecular Science & Engineering
Polymer structure and morphology, polymers for energy storage, nanocomposites, polymers for drug delivery

Adjunct Faculty

Michael J. Kenney, PhD
(Iowa State University)
Adjunct Associate Professor
Analytical chemistry, physical chemistry, chemical education, computer programming, application development

Mark Obrenovich, PhD
(Case Western Reserve University)
Adjunct Professor
Microbiota-Gut-Brain and Endocrine Axes Small molecule Metabolomics, Microbiology, Aging and Aging Intervention; Maillard Reactions (glycation) and Protein Modification, Mitochondrial Aging; Neurodegenerative Disease, Cataractogenesis; Cancer; Cancer Immunology and Complement; Diabetes and Diabetic Complications; Mechanisms of Oxidative Stress; Thermal Medicine, Cerebrovascular Complications of Alzheimer Disease; Nutrition, Complementary, Alternative and Orthomolecular Medicine; Mass Spectrometry, Clinical Chemistry Infectious diseases and Microbiology

Emily B. Pentzer, PhD
(Northwestern University)
Adjunct Associate Professor
Energy, Materials, Nanoscience, Organic Chemistry, Polymer Chemistry, Supramolecular Chemistry, Surface Chemistry, Sustainability & Green, Synthesis

M. Cather Simpson, PhD
(University of New Mexico)
Adjunct Associate Professor
Biophysical chemistry; spectroscopic studies of biologically significant processes

Rajesh Viswanathan, PhD
(Indiana University)
Adjunct Associate Professor
Chemical biology of natural products and their bioactive derivatives, chemo-enzymatic synthesis of alkaloid natural products and their derivatives, synthetic biology strategies for accessing novel chemical diversity in alkaloids, peptides and polyketides, development of medicinal chemistry platforms for discovery of anti-cancer, anti-virulent and anti-malarial lead compounds

Emeritus Faculty

Alfred B. Anderson, PhD
(Johns Hopkins University)
Emeritus Professor
Materials, physical chemistry, electrocatalysis, interfacial phenomena, catalysis, theoretical chemistry

Mary D. Barkley, PhD
(University of California, San Diego)
Emeritus Professor and M. Roger Clapp University Professor of Arts and Sciences
Analytical chemistry, biochemistry, biophysical chemistry, medicinal chemistry, photochemistry, physical chemistry, theoretical chemistry

Malcolm E. Kenney, PhD
(Cornell University)
Emeritus Professor and Hurlbut Professor of Chemistry
Biochemistry, inorganic chemistry, materials and energy, organometallic chemistry, bioinorganic chemistry, computational chemistry, drug delivery, dyes and pigments, medicinal chemistry, nanotechnology, organosilicon chemistry, photochemistry, photodynamic therapy, polymers

Gheorghe D. Mateescu, PhD
(Case Western Reserve University)
Professor Emeritus of Chemistry
Analytical chemistry, physical chemistry

Barry Miller, PhD
(Massachusetts Institute of Technology)
Frank Hovorka Professor Emeritus of Chemistry
Physical chemistry, electrochemistry

Terry Swift, PhD
Professor Emeritus of Chemistry
Analytical chemistry

Fred L. Urbach, PhD
(Michigan State University)
Professor Emeritus of Chemistry
Analytical chemistry, biochemistry, inorganic chemistry, bioinorganic chemistry, catalysis

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

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

First Year	Units	
	Fall	Spring
Principles of Chemistry I (CHEM 105)	3	
Principles of Chemistry Laboratory (CHEM 113)	2	
Principles of Chemistry II (CHEM 106)		3
Year Total:	5	3

Second Year

	Units	
	Fall	Spring
Quantitative Analysis Laboratory (CHEM 304)	2	
Foundations of Analytical Chemistry (CHEM 310)	3	
Organic Chemistry I (CHEM 323)	3	
Laboratory Methods in Organic Chemistry (CHEM 322)		3
Organic Chemistry II (CHEM 324)		3
Year Total:	8	6

Third Year	Units	
	Fall	Spring
Inorganic Chemistry I (CHEM 311)	3	
Laboratory Methods in Inorganic Chemistry (CHEM 331)	3	
Physical Chemistry I (CHEM 335)	3	
Laboratory Methods in Physical Chemistry (CHEM 332)		3
Physical Chemistry II (CHEM 336)		3
Chemistry Elective (300-level, see text below)		3
Year Total:	9	9

Fourth Year	Units	
	Fall	Spring
Research Requirement:	3 - 6	
Undergraduate Research (CHEM 397) or Undergraduate Research/Senior Capstone Project (CHEM 398)		
Biochemistry Requirement (one of the following):	3 - 4	
Introductory Biochemistry I (CHEM 328) (spring, 3 units)		
Biochemistry II: Living Systems (CHEM 329) (fall, 3 units)		
Introduction to Biochemistry: From Molecules To Medical Science (BIOC 307) (4 units)		
Chemistry Elective (300-level, see text below)		3
Technical Electives (see text below)		6
Year Total:	6-10	9

Total Units in Sequence: 55-59

Chemistry BS - Additional Required 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	
One of the following:		3
MATH 224	Elementary Differential Equations	
MATH 228	Differential Equations	
STAT 312	Basic Statistics for Engineering and Science	
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
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; earth, environmental, and planetary sciences; mathematics, applied mathematics, and statistics; and physics.

Bachelor of Arts in Chemistry

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

	Units	
	Fall	Spring
Principles of Chemistry I (CHEM 105)	3	
Principles of Chemistry Laboratory (CHEM 113)	2	
Principles of Chemistry II (CHEM 106)		3
Year Total:	5	3

	Units	
	Fall	Spring
Introductory Organic Chemistry I (CHEM 223) or Organic Chemistry I (CHEM 323)	3	
Introductory Organic Chemistry Laboratory I (CHEM 233) (see below*)	2	
Introductory Organic Chemistry II (CHEM 224) or Organic Chemistry II (CHEM 324)		3
Introductory Organic Chemistry Laboratory II (CHEM 234) (see below*) or Laboratory Methods in Organic Chemistry (CHEM 322)		2-3
Year Total:	5	5-6

	Units	
	Fall	Spring
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	
Introductory Physical Chemistry II (CHEM 302) or Physical Chemistry II (CHEM 336)		3
Introductory Physical Chemistry Laboratory (CHEM 305)		3
Year Total:	8	6

	Units
	Fall
Electives	
Year Total:	

Total Units in Sequence: 32-33

* 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

PHYS 115	Introductory Physics I	4
or PHYS 121	General Physics I - Mechanics	
PHYS 116	Introductory Physics II	4
or PHYS 122	General Physics II - Electricity and Magnetism	
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	
Total Units		16

Bachelor of Arts in Chemical Biology

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

First Year

	Units	
	Fall	Spring
Principles of Chemistry I (CHEM 105)	3	
Principles of Chemistry II (CHEM 106)		3
Principles of Chemistry Laboratory (CHEM 113)		2
Year Total:	3	5

Second Year

	Units	
	Fall	Spring
Organic Chemistry I (CHEM 323) or CHEM 223 and CHEM 224	3-6	
Introductory Organic Chemistry Laboratory I (CHEM 233) (see below*) or Laboratory Methods in Organic Chemistry (CHEM 322)	2-3	
Biochemistry Laboratory (CHEM 306)		3
Introductory Biochemistry I (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	Spring
Technical Electives (see text below)	6	
Undergraduate Research/Senior Capstone Project (CHEM 398)		3 - 6
Year Total:	6	3-6

Total Units in Sequence: 36-43

* 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

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
PHYS 115	Introductory Physics I	4
or PHYS 121	General Physics I - Mechanics	
PHYS 116	Introductory Physics II	4
or PHYS 122	General Physics II - Electricity and Magnetism	
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	
Total Units		24

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 36 hours in education and practicum requirements—and complete a planned sequence of chemistry content course work 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

CHEM 105	Principles of Chemistry I	3
CHEM 106	Principles of Chemistry II	3
CHEM 113	Principles of Chemistry Laboratory	2
CHEM 223 or CHEM 323	Introductory Organic Chemistry I Organic Chemistry I	3
CHEM 224 or CHEM 324	Introductory Organic Chemistry II Organic Chemistry II	3
CHEM 233	Introductory Organic Chemistry Laboratory I	2
CHEM 234	Introductory Organic Chemistry Laboratory II	2
Total Units		18

Other sequences may be followed after consultation with the Department of Chemistry.

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.

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 or CHEM 111.

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 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 ENGR 145.

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 ENGR 145) and CHEM 113. Prereq or Coreq: CHEM 223 or CHEM 323.

CHEM 234. Introductory Organic Chemistry Laboratory II. 2 Units.

A continuation of CHEM 233, involving multi-step organic synthesis, peptide synthesis, product purification and analysis using sophisticated analytical techniques such as chromatography and magnetic resonance spectroscopy. Prereq: CHEM 233. Prereq or Coreq: CHEM 224

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 or ENGR 145.

CHEM 302. Introductory Physical Chemistry II. 3 Units.

Continuation of CHEM 301. Chemical kinetics and catalysis. Introductory quantum chemistry. Spectroscopy. Statistical thermodynamics. Prereq: CHEM 301 or CHEM 335.

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 or ENGR 145) 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 328/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 304.

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 224 or CHEM 324.

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 or ENGR 145.

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 I. 3 Units.

A survey of biochemistry with a strong emphasis on the chemical logic underlying the structure, function, and evolution of biomolecules. Amino acids and protein structure, purification, and analysis. DNA, RNA, genes, and genomes. DNA replication, repair, and recombination. RNA synthesis and processing. Protein synthesis and turnover, control of gene expression. Hemoglobin. Drug development. Enzyme kinetics, catalytic and regulatory strategies. Carbohydrates. Offered as CHEM 328 and CHEM 428. Prereq: CHEM 224 or CHEM 323.

CHEM 329. Biochemistry II: Living Systems. 3 Units.

A survey of biochemical systems exploring their molecular circuitry and architecture. Lipids, cell membranes, channels and pumps. Signal transduction and receptors. Glycolysis, gluconeogenesis, citric acid cycle, and glycogen metabolism. Redox processes, electron transport, and photosynthesis. Fatty acid and amino acid biosynthesis and degradation. Nucleotide, lipid, and steroid biosynthesis. Sensory and immune systems. Molecular motors. Offered as CHEM 329 and CHEM 429. Prereq: CHEM 328.

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.

Modern techniques of physicochemical measurement, including, kinetics, spectroscopy, and electrochemistry and the use of statistical methods for the analysis of experimental data. Seminar discussions and disciplinary writing of results. Counts as SAGES Departmental Seminar. Prereq: CHEM 304. Prereq or Coreq: CHEM 336.

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.

First of a two-semester sequence of physical chemistry for chemistry majors and others with career goals in the physical sciences or engineering. Thermodynamics and its application to chemical systems: First Law, Heat, Work, internal energy, State functions, Thermochemistry, Entropy, 2nd and 3rd law of thermodynamics, Chemical equilibrium, Real Gases, Phase diagrams, ideal and real solutions, Electrolyte solutions, and Electrochemical cells, batteries and fuel cells. Introduction to chemical kinetics. This class is taught using the flipped classroom strategy, where students are expected to learn the basic concepts before class by reading relevant notes and textbook sections, as well as watching videos and answering pre-class questions. In class, students work on exercises and solving problems. Students have ample opportunities to clarify concepts, ask questions, and learn from both peers (in group settings) and the teacher. Recommended preparation: One year each of undergraduate physics and calculus, including partial derivatives. Prereq: CHEM 106 or ENGR 145.

CHEM 336. Physical Chemistry II. 3 Units.

Continuation of CHEM 335. Reaction kinetics and catalysis. Reaction dynamics. Chemical quantum mechanics. Statistical mechanics and thermodynamics. Spectroscopy. Prereq: CHEM 335 or Chemical Engineering Major with at least Junior standing.

CHEM 337. Quantum Mechanics I. 3 Units.

Introduction to 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. Offered as CHEM 335 and CHEM 446. Prereq: CHEM 336.

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 348. Chemistry Fermentation Brewing: To Discern the Molecular Basis of Fermentation and Beer Brewing. 3 Units.

This course includes in-depth discussions of the chemistry and procedures underlying either an aspect of the brewing process or a style of beer in order to discern the molecular basis of fermentation and beer brewing. The biochemistry of yeast fermentation and hops, as well as mashing, lautering, boiling, conditioning, filtering, and packaging will be discussed. There is no lab component (such as brewing beer), although field trips to pubs including the Jolly-Scholar pub (located on campus) will be part of the course, as well as invited speakers who have set up local microbreweries. Each student will be expected to have basic background knowledge of chemistry, such as material taught in standard first year General Chemistry courses. Offered as CHEM 348 and CHEM 448. Prereq: CHEM 106 or ENGR 145.

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 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 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 and public oral presentations are required. Counts as SAGES Senior Capstone.

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 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.

Structure, bonding, and molecular orbital theory. Stereochemistry and conformational analysis. Reaction mechanisms. Aromaticity and aromatic substitution. Pericyclic reactions, orbital symmetry conservation, and free radical chemistry. Recommended preparation: Two semesters of undergraduate organic chemistry.

CHEM 422. Advanced Organic Chemistry II. 3 Units.

Carbocations and carbanions. Nucleophilic and electrophilic aliphatic substitutions. Heterolytic addition and elimination reactions. Carbonyl reactions. Acyl transfer chemistry. Oxidations, reductions, and rearrangements. Prereq: CHEM 421.

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 I. 3 Units.

A survey of biochemistry with a strong emphasis on the chemical logic underlying the structure, function, and evolution of biomolecules. Amino acids and protein structure, purification, and analysis. DNA, RNA, genes, and genomes. DNA replication, repair, and recombination. RNA synthesis and processing. Protein synthesis and turnover, control of gene expression. Hemoglobin. Drug development. Enzyme kinetics, catalytic and regulatory strategies. Carbohydrates. Offered as CHEM 328 and CHEM 428.

CHEM 429. Biochemistry II: Living Systems. 3 Units.

A survey of biochemical systems exploring their molecular circuitry and architecture. Lipids, cell membranes, channels and pumps. Signal transduction and receptors. Glycolysis, gluconeogenesis, citric acid cycle, and glycogen metabolism. Redox processes, electron transport, and photosynthesis. Fatty acid and amino acid biosynthesis and degradation. Nucleotide, lipid, and steroid biosynthesis. Sensory and immune systems. Molecular motors. Offered as CHEM 329 and CHEM 429.

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.

Systematic consideration of reactions involving functional group transformations and carbon-carbon bond formations used in modern organic synthesis. Recommended preparation: Two semesters of undergraduate organic chemistry.

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 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 448. Chemistry Fermentation Brewing: To Discern the Molecular Basis of Fermentation and Beer Brewing. 3 Units.

This course includes in-depth discussions of the chemistry and procedures underlying either an aspect of the brewing process or a style of beer in order to discern the molecular basis of fermentation and beer brewing. The biochemistry of yeast fermentation and hops, as well as mashing, lautering, boiling, conditioning, filtering, and packaging will be discussed. There is no lab component (such as brewing beer), although field trips to pubs including the Jolly-Scholar pub (located on campus) will be part of the course, as well as invited speakers who have set up local microbreweries. Each student will be expected to have basic background knowledge of chemistry, such as material taught in standard first year General Chemistry courses. Offered as CHEM 348 and CHEM 448. Prereq: CHEM 106 or ENGR 145.

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 502. Special Topics in Inorganic Chemistry. 1 - 6 Units.

(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 506. Special Topics in Physical Chemistry. 1 - 6 Units.

(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 Units.

Detailed study of a special topic in chemistry under the guidance of a faculty member.

CHEM 508. Special Readings in Chemistry. 1 - 6 Units.

Detailed study of a special topic in chemistry under the guidance of a faculty member.

CHEM 601. Research. 1 - 18 Units.

(Credit as arranged.) Special research in an area of chemistry under the guidance of a faculty member.

CHEM 605. Chemistry Colloquium Series. 0 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 651. Thesis M.S.. 1 - 18 Units.

(Credit as arranged.)

CHEM 701. Dissertation Ph.D.. 1 - 9 Units.

(Credit as arranged.) Prereq: Predoctoral research consent or advanced to Ph.D. candidacy milestone.

Childhood Studies Program

615 Crawford Hall

schubert.case.edu/education/childhood-studies-minor/ (<http://schubert.case.edu/education/childhood-studies-minor/>)

Phone: 216.368.0540

Anastasia Dimitropoulos, Director, Schubert Center for Child Studies
axd116@case.edu

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.

For students interested in exploring historical and contemporary U.S. policy and how it impacts children, young people, and families, the program offers a unique curriculum through the Child Policy Pathway. This specialization begins with CHST 301 Public Policy in Child Development, a foundational course that introduces students to central public policy issues, basic principles of policy research, policy analysis, research-informed policy development, and advocacy. The Pathway also

offers an experiential learning course on policy-making that includes a trip to Washington, D.C., and an externship at a local organization—a hands-on opportunity to work directly with professionals who design and implement policies that impact the lives of children and their families.

Policy areas of focus include:

- Child poverty and family economic asset-building
- Educational disparities and student supports
- Physical, mental, and social determinants of health
- Child welfare and well-being
- Legal systems and juvenile justice

While the Childhood Studies Program and Minor are 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 bridges research, practice, policy, and education for the well-being of children and adolescents. The Center sponsors research, lectures, and programs on children and childhood and provides opportunities for student involvement in research, education, and policy.

Program Advisors

Gabriella Celeste, JD

Adjunct Assistant Professor, Department of Anthropology; Policy Director, Schubert Center for Child Studies; Co-Director and Minor Advisor, Childhood Studies Program

Anastasia Dimitropoulos, PhD

Associate Professor, Department of Psychological Sciences; Director, Schubert Center for Child Studies; Co-Director and Minor Advisor, Childhood Studies Program

Jill E. Korbin, PhD

Lucy Adams Leffingwell Professor, Department of Anthropology; Senior Advisor, Schubert Center for Child Studies; Co-Director and Minor Advisor, Childhood Studies Program

Sonia Minnes, PhD

Professor, Jack, Joseph and Morton Mandel School of Applied Social Sciences; Research Director, Schubert Center for Child Studies

Elizabeth Short, PhD

Professor, Department of Psychological Sciences; Co-Director and Minor Advisor, Childhood Studies Program

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 the program advisors.

ANTH 306	The Anthropology of Childhood and the Family	3
ANTH 399	Independent Study	1 - 6
CHST 301/ ANTH 305/ POSC 382A	Public Policy in Child Development	3
CHST 302/ANTH 307	Experiential Learning in Child Policy	3
CHST 398/ANTH 308	Child Policy Externship	3
CHST/ANTH/PSCL 398C	Child Policy Externship and Capstone	3
CHST 399	Independent Study	1 - 6
COSI 313	Language Development	3
EDUC 304	Educational Psychology	3
ENGL 369	Children's Literature	3
HSTY 387	Growing Up in America: 1607 - 2000	3
MUED 391	Music in Early Childhood	3
NTRN 328	Child Nutrition, Development and Health	3
NURS 315	Parents and Neonates in Health and Illness	4.5
NURS 316	Infants, Children, and Adolescents in Health and Illness	4.5
NURS 356	Nursing Care of Critically Ill Neonates, Infants, and Children	8
PSCL 230	Child Psychology	3
PSCL 329	Adolescence	3
PSCL 334C	Seminar and Practicum: Hospitalized Children	3
PSCL 335C	Seminar and Practicum: Hospitalized Child *	3
PSCL 344	Developmental Psychopathology	3
PSCL 379	Neurodevelopmental Disabilities	3
PSCL 393	Experimental Child Psychology	3
PSCL 397	Independent Study	1 - 3
SASS 315	Adoption Practice and Policy	3
SASS 355	Drugs and Youth	3
SASS 368	Whatever it Takes: Creating Paths Out of Poverty for Children	3
SASS 375D	International Travel & Study Abroad: Child Welfare in Guatemala	3
SASS 390	Independent Study for Undergraduates	1 - 3
SOCI 320	Delinquency and Juvenile Justice	3
SOCI 361	The Life Course	3
SOCI 375	Independent Study	1 - 3

Independent studies or one-time course offerings approved by the program advisors 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 the hours they complete for the Childhood Studies minor toward a major in another field. If they are pursuing more than one major, they may count up to six hours toward each one.

Courses

CHST 301. Public Policy in Child Development. 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 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.

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.

CHST 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.

CHST 399. Independent Study. 1 - 6 Units.

Students propose topics for independent reading and research.

Department of Classics

Mather House

<http://classics.case.edu>

Phone: 216.368.2348; Fax: 216.368.4681

Paul Iversen, Department Chair

paul.iversen@case.edu

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, archaeology and medicine, and in the visual and material cultures of the ancient Mediterranean world, including the Ancient Near East and Egypt. 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 and Akkadian, as a crucial point of entry into the conceptual worlds of Greece, Rome, and the Ancient Near East and Egypt. Students are also exposed to the various facets of antiquity, particularly its mingling of cultures and belief systems, that made the ancient Mediterranean world the progenitor of the modern West and an enduring influence on global culture. The different subdisciplines and methodologies represented in the department involve multiple ways of exploring and understanding antiquity. Our students explore the philological, literary, historical, social, 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.

Knowledge of antiquity constitutes the backbone of a liberal education and is useful for further professional training in whatever field a student may ultimately pursue. It also provides an excellent basis for informed engagement with the political, social, and cultural issues of our turbulent times, as well as for the appreciation and enjoyment of artistic and cultural achievement. A major or minor in Classics or a minor in the Ancient Near East and Egypt may be 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 and archival work.

Department Faculty

Paul A. Iversen, PhD

(The Ohio State University)

Associate Professor and Chair

Greek and Latin epigraphy; Hellenistic history and culture; Greek and Roman New Comedy

Evelyn Adkins, PhD

(University of Michigan)

Assistant Professor

Latin literature; the ancient novel; gender and sexuality; Roman social history

Peter E. Knox, PhD

(Harvard University)

Eric and Jane Nord Family Professor; Director, Baker-Nord Center for the Humanities

Greek poetry of the Hellenistic period; Latin poetry; Roman culture; ancient epic and classical reception

Rachel Sternberg, PhD

(Bryn Mawr College)

Associate Professor

Greek language and literature; Greek social history; history of emotion; reception of the classical tradition in the age of Jefferson

Timothy Wutrich, PhD

(Tufts University)

Senior Instructor

Greek and Roman drama; Vergil; the Classical Tradition in literature and the arts

Cooperating Faculty

Maggie L. Popkin, PhD
(Institute of Fine Arts, New York University)
Robson Junior Professor; Associate 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

Visiting Faculty

Paul Hay, PhD
(University of Texas)
Visiting Assistant Professor
"Saecularity" in post-Augustan Rome; Roman literature

Lecturer

Maddalena Rumor, PhD
(Freie Universität, Berlin)
Lecturer
Ancient Babylonian medicine and science

Adjunct Faculty

Mark Hammond, PhD
(University of Missouri)
Adjunct Assistant Professor
Greek and Roman Art and Archaeology; Late Antiquity; Ceramics; Post-Classical Greece

Karen Laurence, PhD
(University of Michigan)
Assistant Director of Faculty and Alumni Engagement; Adjunct Assistant Professor
Greek sanctuaries and games under Roman rule

Meghan Strong, PhD
(Cambridge University)
Adjunct Assistant Professor
Ancient Egyptian art and archaeology

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, philosophical, and anthropological. In addition, departmental courses often examine the reception of ancient Mediterranean literature, art, and culture in and beyond the Mediterranean from the end of antiquity through the present day.

Major Concentrations

There are two separate concentrations in the Classics major. **Philology** (Concentration A) is devoted to ancient languages and their associated literatures in the original languages (Greek, Latin, or Greek and

Latin). **Classical Civilization** (Concentration B) focuses on ancient history, literature in translation, and archaeology. Please note that for Concentration B, 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 year SAGES requirements in Classics, two additional courses (6 hours) are required, CLSC 320 Alexander the Great: Materials and Methods 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** (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 Concentration A are required to take CLSC 231 Athens to Alexandria: The World of Ancient Greece and CLSC 232 Gods and Gladiators: The World of Ancient Rome, then any combination of eight GREK or LATN courses, at least two of which (6 hours) must be at the 300-level. To receive the BA in Classics: Greek and Latin, students must complete at least one year of their second language.

In the **Classical Civilization Concentration** (B), students are required to take CLSC 231 Athens to Alexandria: The World of Ancient Greece and CLSC 232 Gods and Gladiators: The World of Ancient Rome; 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.

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 Ancient Near East and Egypt, anthropology, art history, philosophy, comparative literature, history, theater, or English.

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

Our minors in Classics, Greek, and Latin are designed to acquaint the student with aspects of the ancient civilizations of Greece and Rome or the Greek and Latin languages by means of 5 courses (15 credit hours).

There are three separate concentrations for the classics minor. The minor in **Classical Civilization** (Concentration A) focuses on ancient history, literature (in translation or in the original languages), and archaeology. The minor in **Greek** (Concentration B) is devoted to the ancient Greek language and its associated literature in the original language, as well as Greek civilization and history. The minor in **Latin** (Concentration C) is devoted to the Latin language and its associated literature in the original language, as well as Roman civilization and history.

Minor Concentrations

In the **Classical Civilization Concentration** (A), students are required to take CLSC 231 Athens to Alexandria: The World of Ancient Greece and CLSC 232 Gods and Gladiators: The World of Ancient Rome, then any combination of three other CLSC, GREK, or LATN courses, at least one of which (3 hours) must be at the 300-level.

In the **Greek Concentration** (B), students are required to take CLSC 231 Athens to Alexandria: The World of Ancient Greece and four other GREK courses, at least one of which must be at the 300 level.

In the **Latin Concentration** (C), students are required to take CLSC 232 Gods and Gladiators: The World of Ancient Rome and four other LATN courses, at least one of which must be at the 300 level.

Students can also design their own minor with a course of study in the **Ancient Near East and Egypt** that requires 5 courses, at least one of which must be at the 300 level.

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.

The MA programs in Classical Studies and in Classical and Medieval Studies teach students to critically analyze texts and material culture by using various theoretical approaches. They also stress ethical use of sources and material artifacts, which requires providing proper citations and obtaining permission to publish.

The programs offer a broad selection of courses categorized by era (Archaic, Classical, Hellenistic, Republican, Imperial, and Medieval) and genre (epic, tragedy, comedy, history, satire, elegiac) as well as material culture courses in art history, archaeology, and epigraphy.

Curriculum Requirements:

Students are to maintain a GPA of 3.0 or higher throughout the programs.

Full-time students should complete their degrees within two years, part-time students within five years.

MA in Classical Studies

Required Courses

CLSC 420	Alexander the Great: Materials and Methods	3
CLSC 651	Thesis M.A.	1 - 6

Elective Courses

6 credit hours (2 courses) of Classics courses at the 400-level

15 credit hours (5 courses) of any combination of Greek or Latin at the 400-level

Thesis

Students are required to write a substantial (at least 12,000-13,000 words or approximately 50 pages), carefully argued, original piece of scholarship that is critically documented with both primary and secondary sources on a topic in Classics, under the direction of a faculty advisor. They are also required to give an oral presentation and defense. As the culminating learning experience, the thesis gives students an opportunity to demonstrate expertise in their chosen area of research.

Medieval Track

Required Courses

CLSC 420	Alexander the Great: Materials and Methods	3
CLSC 651	Thesis M.A.	1 - 6

Elective Courses

15 credit hours (five courses) of any combination of Greek and Latin courses, one of which must be LATN 409 Medieval Latin

6 credit hours (2 courses) on any subject in Medieval Studies at the 400-level and above

Thesis

Students must write a substantial (at least 12,000-13,000 words or approximately 50 pages), carefully argued, original piece of scholarship that is carefully documented with primary and secondary sources on a topic in Medieval Studies, under the direction of a faculty advisor. They are also required to give an oral presentation and defense.

How to Apply

Interested individuals can apply to the programs through the School of Graduate Studies (<https://case.edu/gradstudies/>) and are admitted under Plan A (Master's Thesis).

Application Requirements

- Transcripts
- GPA: 3.5 or higher recommended
- 2 years of college-level Greek or Latin
- GRE scores
- Two letters of recommendation
- Statement of purpose

Application Deadlines

For fall semester enrollment: May 1

For spring semester enrollment: November 1 (for applicants seeking both admission and financial aid)

AKKD Courses

AKKD 101. Beginning Akkadian I. 3 Units.

This course is the first of a sequence of two courses intended to cover the fundamentals of Akkadian grammar and a large number of the most common cuneiform signs encountered. A sample of texts (tablets) from the most important genres of cuneiform literature will be read. Counts for CAS Global & Cultural Diversity Requirement.

AKKD 102. Beginning Akkadian II. 3 Units.

This course, the second in a two-semester sequence, completes the introduction to the grammar of Akkadian and the most common cuneiform signs. Via grammar and exercises, we will continue to familiarize ourselves with some of the more important genres of Akkadian writing as well as the history and culture of Mesopotamian civilization. Counts for CAS Global & Cultural Diversity Requirement. Prereq: AKKD 101.

AKKD 205. Readings from the Epic of Gilgamesh. 3 Units.

In this course, we will read the entire Standard Babylonian recension of the Epic of Gilgamesh, considered the first great work of literature, from the original Akkadian text. While the primary goal of the course will be to become proficient readers of Akkadian, we will take some excursus on topics such as Babylonian religion, whether Gilgamesh was a historical figure or not, how the text was put together, and its possible influence on later heroic traditions such as the Greco-Roman. Offered as AKKD 205, AKKD 405, WLIT 205 and WLIT 405. Counts for CAS Global & Cultural Diversity Requirement. Prereq: AKKD 101 and AKKD 102.

AKKD 395. Advanced Topics in Akkadian Literature. 3 Units.

Directed readings in selected Akkadian texts in the cuneiform script either of the Old Babylonian or the Neo-Assyrian periods to serve the individual interests and needs of students (texts may be drawn from a variety of text genres: mythological, historical, scientific, medical, correspondence, religious, etc.). Offered as AKKD 395, AKKD 495, WLIT 395 and WLIT 495. Counts for CAS Global & Cultural Diversity Requirement. Prereq: AKKD 101 and AKKD 102.

AKKD 405. Readings from the Epic of Gilgamesh. 3 Units.

In this course, we will read the entire Standard Babylonian recension of the Epic of Gilgamesh, considered the first great work of literature, from the original Akkadian text. While the primary goal of the course will be to become proficient readers of Akkadian, we will take some excursus on topics such as Babylonian religion, whether Gilgamesh was a historical figure or not, how the text was put together, and its possible influence on later heroic traditions such as the Greco-Roman. Offered as AKKD 205, AKKD 405, WLIT 205 and WLIT 405. Counts for CAS Global & Cultural Diversity Requirement. Prereq: AKKD 101 and AKKD 102.

AKKD 495. Advanced Topics in Akkadian Literature. 3 Units.

Directed readings in selected Akkadian texts in the cuneiform script either of the Old Babylonian or the Neo-Assyrian periods to serve the individual interests and needs of students (texts may be drawn from a variety of text genres: mythological, historical, scientific, medical, correspondence, religious, etc.). Offered as AKKD 395, AKKD 495, WLIT 395 and WLIT 495. Counts for CAS Global & Cultural Diversity Requirement. Prereq: AKKD 101 and AKKD 102.

ANEE Courses**ANEE 107. Introduction to the Ancient Near East and Egypt. 3 Units.**

This is an introduction to the history and culture of the Ancient Near East and Egypt, a land spanning from modern Iraq to Egypt that was home to the earliest known societies in written history. In this course we will learn about the relatively recent discoveries of these ancient civilizations, the first deciphering of their scripts, about the political, social, and cultural history of the peoples who gave rise to the Babylonian, Assyrian, and Egyptian empires (besides other Levantine and Anatolian powers and smaller nations such as Israel). Various aspects of the literary/scientific production of these societies will also be discussed, while reflecting upon their cultural legacy. Offered as ANEE 107 and HSTY 107. Counts for CAS Global & Cultural Diversity Requirement.

ANEE 210. Ancient Near Eastern and Egyptian Literature. 3 Units.

This course offers a broad survey of Ancient Near Eastern and Egyptian literature. We will explore the rich heritage of narrative and mythological compositions through which the Mesopotamians and Egyptians tried to explain the natural phenomena, the religious beliefs and the history of the world around them. Examples of this include myths of creation, stories about gods, the great Flood, the Epic of Gilgamesh, the story of Sinuhe and many others. Other genre of literature will be explored such as the most ancient Legal Codes in history, Pyramid Texts, Wisdom Literature and Proverbs, Love Poetry and Humoristic compositions. Finally, some time will be devoted to the relation of these literatures with the texts that were composed in the Levant, where the alphabet was envisioned, and with the Bible, which grew within this Near Eastern context. All the texts will be read in English translation. Offered as ANEE 210 and CLSC 210.

ANEE 229. Introduction to Egyptology. 3 Units.

Have you marveled at how the pyramids were built? Ever wanted to read the Book of the Dead? Or were you always fascinated by mummies, expansive temples and Egyptian gods and goddesses? This course will cover all these topics, and many more, through an exploration of the writings, art, and architecture of the ancient Egyptians. In addition to examining the archaeological remains of Egyptian civilization, the course will incorporate an introduction to translation of hieroglyphs—the written form of the ancient Egyptian language.

ANEE 315. Art and Architecture of Ancient Egypt and Mesopotamia. 3 Units.

The golden mask of Tutankhamun, the imposing Ishtar Gate, delicately carved ivories, and expertly chiseled stone sculpture; the art and architecture of Ancient Egypt and Mesopotamia are some of the most captivating examples of visual culture from the ancient world. This course will emphasize the examination of art and architecture of Egypt and Mesopotamia in context, focusing on material from prehistory through the 6th century BC. We will explore the deep connection between art, religion, and the worldview of Ancient Egypt and Mesopotamia, in addition to the meaning and audience for art, the principles which guided art production, trends in media and themes over time, and the relationship of writing and art. We will also consider the interaction between Egyptian and Mesopotamian art, museums and the modern artistic and political landscapes. Offered as ANEE 315, ANEE 415, ARTH 315 and ARTH 415.

ANEE 320. Gods and Demons in the Ancient Near East and Egypt. 3 Units.

The roots of many modern religious, literary, social, and political notions reach deep into the fertile soil of Ancient Near Eastern and Egyptian cultures, which developed as early as the fourth millennium BCE and flourished until the Hellenistic period. In this course we will examine various components of the religious, divinatory and magical systems of these cultures, and reflect upon their relationship with the stories that are found in the Hebrew Bible. We will learn (through a critical analysis of a selection of ancient texts) about ancient Mesopotamian and Egyptian deities, demons, myths, and magical rituals. We will also explore notions of creation, cosmic order, the human condition, death, afterlife, divine favor, and a wide variety of beliefs that, while often contradictory to modern ways of thinking, combined into unified religious systems. Offered as ANEE 320, RLG 320 and RLG 420.

ANEE 337. Ancient Medicine. 3 Units.

This course offers a general survey of the history of medicine from its origins in pre-historical times to Galen (2nd c. CE) with a view to gaining a better understanding of the path that eventually lead to modern medical practice. The various medical systems considered, including the ancient Babylonian, Egyptian, Jewish, Chinese, Ayurvedic, Greek and Roman traditions, will be examined through the study of primary and secondary sources, while key conceptual developments and practices are identified within their cultural and social context. Special issues, such as epidemics, women's medicine, and surgery, are also explored and discussed. Offered as ANEE 337, CLSC 337, CLSC 437, HSTY 337, and HSTY 437. Counts for CAS Global & Cultural Diversity Requirement.

ANEE 344. Archaeology of the Ancient Mediterranean. 3 Units.

This course examines the ancient Mediterranean through the material cultures of Egypt, Greece and Rome. Each of these great civilizations will be individually explored, but also examined within a broader historical context. Particular focus will be placed on the social, political and economic ideas that were exchanged across the Mediterranean Sea and the influence this interconnectivity had on eastern Mediterranean societies. Offered as ANEE 344, ANEE 444, ANTH 344, ANTH 444, CLSC 344 and CLSC 444.

ANEE 415. Art and Architecture of Ancient Egypt and Mesopotamia. 3 Units.

The golden mask of Tutankhamun, the imposing Ishtar Gate, delicately carved ivories, and expertly chiseled stone sculpture; the art and architecture of Ancient Egypt and Mesopotamia are some of the most captivating examples of visual culture from the ancient world. This course will emphasize the examination of art and architecture of Egypt and Mesopotamia in context, focusing on material from prehistory through the 6th century BC. We will explore the deep connection between art, religion, and the worldview of Ancient Egypt and Mesopotamia, in addition to the meaning and audience for art, the principles which guided art production, trends in media and themes over time, and the relationship of writing and art. We will also consider the interaction between Egyptian and Mesopotamian art, museums and the modern artistic and political landscapes. Offered as ANEE 315, ANEE 415, ARTH 315 and ARTH 415.

ANEE 444. Archaeology of the Ancient Mediterranean. 3 Units.

This course examines the ancient Mediterranean through the material cultures of Egypt, Greece and Rome. Each of these great civilizations will be individually explored, but also examined within a broader historical context. Particular focus will be placed on the social, political and economic ideas that were exchanged across the Mediterranean Sea and the influence this interconnectivity had on eastern Mediterranean societies. Offered as ANEE 344, ANEE 444, ANTH 344, ANTH 444, CLSC 344 and CLSC 444.

CLSC Courses**CLSC 102. Introduction to Byzantine History, 500-1500. 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 102 and HSTY 102. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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, Epidauros, 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. Counts for CAS Global & Cultural Diversity Requirement.

CLSC 202. Classical Mythology. 3 Units.

The myths of Classical Greece and Rome, their interpretation and influence. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

CLSC 204. Heroes and Hustlers in Roman 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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Art, Power, and Identity in Ancient Rome. 3 Units.

This course explores the history of ancient Roman art and architecture, with a particular emphasis on the Roman Empire. We will focus on situating objects and monument in the changing historical, cultural, political, and religious contexts of the Roman world. The course will introduce students to famous buildings such as the Colosseum and the Pantheon in Rome, but we will also look at lesser known but equally fascinating works that offer insight into the imaginations, aspirations, and identities of the Roman Empire's diverse population. From statues and paintings to oil lamps with erotic scenes, drinking cups with images of famous athletes, and even travel souvenirs, Romans were surrounded by images and objects that allowed them to participate in but also shape and resist a broader imperial culture. Students will consider how art and architecture shaped the complex ways that people living in the Roman world related to the empire and to more regional and local cultural traditions from Egypt and North Africa, Northern Europe, and the Near East. Finally, we will also examine how the legacy of Roman art and architecture continues to fuel debates about power, politics, and representation in the United States, including controversies over Confederate monuments. The course will include frequent visits to the Cleveland Museum of Art and other area sites such as Lakeview Cemetery (where some Cleveland patrons commissioned exact replicas of Roman monuments!). Offered as ARTH 230 and CLSC 230. Counts for CAS Global & Cultural Diversity Requirement.

CLSC 231. Athens to Alexandria: The World of Ancient Greece. 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. Counts for CAS Global & Cultural Diversity Requirement.

CLSC 232. Gods and Gladiators: The World of Ancient Rome. 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. Counts for CAS Global & Cultural Diversity Requirement.

CLSC 295. Medical Terminology. 3 Units.

A self-paced, computer-assisted course on the classical foundations (etymology) of modern English as well as the basic principles on which roots, prefixes, and suffixes combine to give precise meanings to composite words, which is then applied toward learning medical, biomedical and scientific terminology.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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 RLG. Offered as ARTH 311, ARTH 411, and CLSC 311. Counts for CAS Global & Cultural Diversity Requirement.

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 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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

CLSC 318. Archaeological & Epigraphical Field School. 3 Units.

This interdisciplinary course takes place in situ in the Mediterranean and will be attached to an active archaeological project. Students will learn the methodological principles of archaeological and epigraphical fieldwork by participating in activities such as surveying, excavation, museum work, geophysical survey, artifact analysis, and other scientific techniques. In addition to work in the field and museum, students will receive an introduction to the history Greco-Roman culture through visits to major archaeological sites in the region. Examples of active archaeological projects may vary, depending on the year. Offered as CLSC 318 and CLSC 418.

CLSC 319. Greek Tragedy: Plays and Performance in Ancient Athens. 3 Units.

This course provides students the opportunity to read a significant number of ancient Greek tragedies in modern English translations. We read, study, and discuss selected works by Aeschylus, Sophocles, and Euripides, as well as selected criticism, ancient and modern, of these plays. All semester we read the plays as literature composed for performance. We study literary elements within the plays and theatrical possibilities inherent in the texts. As we read the plays, we pay close attention to the historical context and look for what each play can tell us about myth, religion, ethics, and society in ancient Athens. Finally, we give 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 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 discuss the plays that they read in class. The course has three examinations and a final project that includes writing an essay and staging a monologue or scene from one of the tragedies. Offered as CLSC 319, CLSC 419, THTR 319, THTR 419, WLIT 319, and WLIT 419. Counts for CAS Global & Cultural Diversity Requirement.

CLSC 320. Alexander the Great: Materials and Methods. 3 Units.

This course is the Classics Departmental Seminar in the SAGES sequence (normally taken in the Spring semester of a major's Junior year), though it can also be taken for regular credit in Classics or History by both undergraduate and graduate students. The seminar offers students a firm grounding in the discipline of Classics with an emphasis on the diverse materials (particularly primary source material), methods and approaches that can be brought to bear on the study of Greco-Roman antiquity. Students will read and discuss the ancient sources and contemporary scholarship on the enigmatic Alexander the Great drawn from various fields of classics, including history, archaeology, art history, philosophy, gender studies, epigraphy, numismatics, and the reception of Alexander. Based upon this, they will then write a research paper that employs conventions found in the field of Classics. Much of this training, however, will also be transferable to other fields and periods. Because the scope of the seminar moves (along with Alexander himself) beyond Europe and examines the historical foundations of the antagonism between East and West, this course qualifies as a Global and Cultural Diversity course. Offered as CLSC 320, CLSC 420, HSTY 320 and HSTY 420. Counts as SAGES Departmental Seminar. Counts for CAS Global & Cultural Diversity Requirement.

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 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 "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. Counts for CAS Global & Cultural Diversity Requirement.

CLSC 322. Theater in Ancient Rome. 3 Units.

This course is designed as a continuation of and companion to CLSC/THTR/WLIT 319/419 Greek Tragedy: Plays and Performance in Ancient Athens, although it may be taken without having taken, or before having taken, that course. Students in Theater in Ancient Rome 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, that may include 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. 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 Roman civilization. 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 may include a brief survey of selected post-classical works indebted to the tradition of Roman drama and theater. Authors that may 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, THTR 322, THTR 422, WLIT 322, and WLIT 422. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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, and CLSC 427. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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 336. Representations of War in Ancient Rome. 3 Units.

Few societies in history have been as militaristic as ancient Rome-- or as proud of their warrior culture. This course examines the many ways that Romans constructed and contested their conceptions of war from the founding of the Roman Republic in 509 B.C.E. to the reign of Constantine (306-337 C.E.). Why did Romans choose to represent war in certain ways, and how did these artistic representations shape Romans' military values? What can the visual record tell us about how different groups (soldiers, women, slaves) experienced war in the Roman world? We will explore major public monuments in the city of Rome (including triumphal arches and the Colosseum) and private objects (such as silver drinking vessels) to observe how Roman militarism pervaded different walks of life. We will also examine monuments on the edges of Rome's empire, such as the towering trophies in modern France and Romania, to explore how works of art and architecture mediated the relationship between Romans and the peoples they conquered. Students will be encouraged to think about how art and architecture contributed to the construction of militarism as a chief Roman value, but also about how visual representations provided an important means to debate the value of Rome's military efforts, to subvert Rome's rigidly hierarchical social order, and to grapple with what it meant to "be Roman" as wars transformed Rome from a small city in Italy to a massive, pan-Mediterranean empire. After exploring Romans' conceptions of war and victory, students also may ask whether the common comparison between the Roman Empire and modern America is appropriate. Offered as ARTH 336, ARTH 436, CLSC 336 and CLSC 436. Counts for CAS Global & Cultural Diversity Requirement.

CLSC 337. Ancient Medicine. 3 Units.

This course offers a general survey of the history of medicine from its origins in pre-historical times to Galen (2nd c. CE) with a view to gaining a better understanding of the path that eventually lead to modern medical practice. The various medical systems considered, including the ancient Babylonian, Egyptian, Jewish, Chinese, Ayurvedic, Greek and Roman traditions, will be examined through the study of primary and secondary sources, while key conceptual developments and practices are identified within their cultural and social context. Special issues, such as epidemics, women's medicine, and surgery, are also explored and discussed. Offered as ANEE 337, CLSC 337, CLSC 437, HSTY 337, and HSTY 437. Counts for CAS Global & Cultural Diversity Requirement.

CLSC 344. Archaeology of the Ancient Mediterranean. 3 Units.

This course examines the ancient Mediterranean through the material cultures of Egypt, Greece and Rome. Each of these great civilizations will be individually explored, but also examined within a broader historical context. Particular focus will be placed on the social, political and economic ideas that were exchanged across the Mediterranean Sea and the influence this interconnectivity had on eastern Mediterranean societies. Offered as ANEE 344, ANEE 444, ANTH 344, ANTH 444, CLSC 344 and CLSC 444.

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 231 and CLSC 232, 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 Units.

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 418. Archaeological & Epigraphical Field School. 3 Units.

This interdisciplinary course takes place in situ in the Mediterranean and will be attached to an active archaeological project. Students will learn the methodological principles of archaeological and epigraphical fieldwork by participating in activities such as surveying, excavation, museum work, geophysical survey, artifact analysis, and other scientific techniques. In addition to work in the field and museum, students will receive an introduction to the history Greco-Roman culture through visits to major archaeological sites in the region. Examples of active archaeological projects may vary, depending on the year. Offered as CLSC 318 and CLSC 418.

CLSC 419. Greek Tragedy: Plays and Performance in Ancient Athens. 3 Units.

This course provides students the opportunity to read a significant number of ancient Greek tragedies in modern English translations. We read, study, and discuss selected works by Aeschylus, Sophocles, and Euripides, as well as selected criticism, ancient and modern, of these plays. All semester we read the plays as literature composed for performance. We study literary elements within the plays and theatrical possibilities inherent in the texts. As we read the plays, we pay close attention to the historical context and look for what each play can tell us about myth, religion, ethics, and society in ancient Athens. Finally, we give 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 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 discuss the plays that they read in class. The course has three examinations and a final project that includes writing an essay and staging a monologue or scene from one of the tragedies. Offered as CLSC 319, CLSC 419, THTR 319, THTR 419, WLIT 319, and WLIT 419. Counts for CAS Global & Cultural Diversity Requirement.

CLSC 420. Alexander the Great: Materials and Methods. 3 Units.

This course is the Classics Departmental Seminar in the SAGES sequence (normally taken in the Spring semester of a major's Junior year), though it can also be taken for regular credit in Classics or History by both undergraduate and graduate students. The seminar offers students a firm grounding in the discipline of Classics with an emphasis on the diverse materials (particularly primary source material), methods and approaches that can be brought to bear on the study of Greco-Roman antiquity. Students will read and discuss the ancient sources and contemporary scholarship on the enigmatic Alexander the Great drawn from various fields of classics, including history, archaeology, art history, philosophy, gender studies, epigraphy, numismatics, and the reception of Alexander. Based upon this, they will then write a research paper that employs conventions found in the field of Classics. Much of this training, however, will also be transferable to other fields and periods. Because the scope of the seminar moves (along with Alexander himself) beyond Europe and examines the historical foundations of the antagonism between East and West, this course qualifies as a Global and Cultural Diversity course. Offered as CLSC 320, CLSC 420, HSTY 320 and HSTY 420. Counts as SAGES Departmental Seminar. Counts for CAS Global & Cultural Diversity Requirement.

CLSC 422. Theater in Ancient Rome. 3 Units.

This course is designed as a continuation of and companion to CLSC/THTR/WLIT 319/419 Greek Tragedy: Plays and Performance in Ancient Athens, although it may be taken without having taken, or before having taken, that course. Students in Theater in Ancient Rome 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, that may include 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. 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 Roman civilization. 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 may include a brief survey of selected post-classical works indebted to the tradition of Roman drama and theater. Authors that may 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, THTR 322, THTR 422, WLIT 322, and WLIT 422. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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, and CLSC 427. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

CLSC 436. Representations of War in Ancient Rome. 3 Units.

Few societies in history have been as militaristic as ancient Rome-- or as proud of their warrior culture. This course examines the many ways that Romans constructed and contested their conceptions of war from the founding of the Roman Republic in 509 B.C.E. to the reign of Constantine (306-337 C.E.). Why did Romans choose to represent war in certain ways, and how did these artistic representations shape Romans' military values? What can the visual record tell us about how different groups (soldiers, women, slaves) experienced war in the Roman world? We will explore major public monuments in the city of Rome (including triumphal arches and the Colosseum) and private objects (such as silver drinking vessels) to observe how Roman militarism pervaded different walks of life. We will also examine monuments on the edges of Rome's empire, such as the towering trophies in modern France and Romania, to explore how works of art and architecture mediated the relationship between Romans and the peoples they conquered. Students will be encouraged to think about how art and architecture contributed to the construction of militarism as a chief Roman value, but also about how visual representations provided an important means to debate the value of Rome's military efforts, to subvert Rome's rigidly hierarchical social order, and to grapple with what it meant to "be Roman" as wars transformed Rome from a small city in Italy to a massive, pan-Mediterranean empire. After exploring Romans' conceptions of war and victory, students also may ask whether the common comparison between the Roman Empire and modern America is appropriate. Offered as ARTH 336, ARTH 436, CLSC 336 and CLSC 436. Counts for CAS Global & Cultural Diversity Requirement.

CLSC 437. Ancient Medicine. 3 Units.

This course offers a general survey of the history of medicine from its origins in pre-historical times to Galen (2nd c. CE) with a view to gaining a better understanding of the path that eventually lead to modern medical practice. The various medical systems considered, including the ancient Babylonian, Egyptian, Jewish, Chinese, Ayurvedic, Greek and Roman traditions, will be examined through the study of primary and secondary sources, while key conceptual developments and practices are identified within their cultural and social context. Special issues, such as epidemics, women's medicine, and surgery, are also explored and discussed. Offered as ANEE 337, CLSC 337, CLSC 437, HSTY 337, and HSTY 437. Counts for CAS Global & Cultural Diversity Requirement.

CLSC 444. Archaeology of the Ancient Mediterranean. 3 Units.

This course examines the ancient Mediterranean through the material cultures of Egypt, Greece and Rome. Each of these great civilizations will be individually explored, but also examined within a broader historical context. Particular focus will be placed on the social, political and economic ideas that were exchanged across the Mediterranean Sea and the influence this interconnectivity had on eastern Mediterranean societies. Offered as ANEE 344, ANEE 444, ANTH 344, ANTH 444, CLSC 344 and CLSC 444.

CLSC 481. Special Studies. 1 - 6 Units.

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.

CLSC 651. Thesis M.A.. 1 - 6 Units.

Limited to M.A. candidates actively engaged in the research and writing of their theses. Credit as arranged.

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 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. Prereq: 200-level GREK or equivalent.

GREK 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. Prereq: 200-level GREK or equivalent.

GREK 380. 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. Prereq: 200-level GREK or equivalent.

GREK 395. Directed Readings. 1 - 3 Units.

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.

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 Units.

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 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 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. 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 355. The Roman Novel. 3 Units.

Readings from the two surviving Roman novels, Petronius' *Satyricon* and Apuleius' *Metamorphoses* or *Golden Ass*. There will also be discussion of the major themes and approaches to the Roman novel. Recommended preparation: LATN 200 level course or equivalent. Offered as LATN 355 and LATN 455.

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 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 Units.

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 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.

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.

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.

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 455. The Roman Novel. 3 Units.

Readings from the two surviving Roman novels, Petronius' *Satyricon* and Apuleius' *Metamorphoses* or *Golden Ass*. There will also be discussion of the major themes and approaches to the Roman novel. Recommended preparation: LATN 200 level course or equivalent. Offered as LATN 355 and LATN 455.

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 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 Units.

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

617C Crawford Hall
www.case.edu/artsci/cogs (<http://www.case.edu/artsci/cogs/>)
 Phone: 216.368.4753
 Todd Oakley, Department Chair
todd.oakley@case.edu

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, morality, 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.

Department Faculty

Todd Oakley, PhD
 (University of Maryland)
Professor and Chair
 Cognitive linguistics; discourse analysis; attention

William E. Deal, PhD
 (Harvard University)
Severance Professor in the History of Religion
 Cognitive science of religion and ethics; Buddhist theory of mind

Fey Parrill, PhD
 (University of Chicago)
Associate Professor
 Language and co-speech gesture

Yasuhiro Shirai, PhD
 (University of California, Los Angeles)
Professor
 First- and second-language acquisition

Vera Tobin, PhD
 (University of Maryland)
Associate Professor
 Cognitive linguistics, pragmatics, literature; evolution and development

Mark Turner, PhD
 (University of California, Berkeley)
Institute Professor
 Higher-order cognition and creativity; conceptual integration

Secondary Faculty

Daniela Calvetti, PhD
 (University of North Carolina, Chapel Hill)
James Wood Williamson Professor, Department of Mathematics, Applied Mathematics, and Statistics

Angela Ciccio, PhD
(Case Western Reserve University)
Associate Professor, Department of Psychological Sciences

Fred Collopy, PhD
(Wharton School of the University of Pennsylvania)
Professor (emeritus), Department of Design and Innovation, Weatherhead School of Management

Heath A. Demaree, PhD
(Virginia Institute of Technology)
Professor and Chair, 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 Professor, Department of Psychological Sciences

Peter Thomas, PhD
(University of Chicago)
Professor, Department of Mathematics, Applied Mathematics, and Statistics

Peter Whitehouse, MD, PhD
(Johns Hopkins University)
Professor, Department of Neurology, CWRU School of Medicine Alzheimer's & Intergenerational Learning

Adjunct Faculty

Per Aage Brandt, Doctorat d'Etat
(Sorbonne I, Paris)
Adjunct Professor, Retired

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

Bruce M. Latimer, PhD
(Kent State University)
Adjunct Professor, Cleveland Museum of Natural History

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	Cognition and Culture	3
And 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	Cognition and Culture	
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."

—Gilles Fauconnier, *Encyclopedia of Cognitive Science* (2006)

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/academicrequirements/>) section of this bulletin. Accordingly, it requires 30 credit hours and a written MA thesis.

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. Cognition and Culture. 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 215. Words and Mind. 3 Units.

There is something fascinating and special about words. They are the aspect of language that everyone knows about and pays attention to—and every academic discipline with an interest in language has something to say about them! The sheer number of words known by every speaker of any human language is quite vast (and the exact number is a mystery). In this class we will learn about words in all their aspects, and see what the wide weirdness of words can help us understand about the human mind. Subjects covered include the question of what makes a word (is "ouch" a word? "ain't"?); word origins; taboo words; words and memory; word boundaries; and word games, puns, and puzzles.

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 and 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 305. Social Cognition and the Brain. 3 Units.

Human beings develop intricate means of presenting themselves to others; of representing others as friends, enemies, or strangers; of making quick assessments of any situation based on the attribution of intentions; of sizing up the Other via symbols and other shibboleths; and of the disposition and ability to empathize and sympathize with the emotional states of others for specific purposes. In recent years, the role of culture and cultural diversity has come to play a significant role in thinking about social cognition and the evolution of sociality. It is likewise an unfortunate fact that many human beings lack many of the means, abilities, and dispositions to connect with one another easily and without extensive and explicit tutelage. Such clinical populations (e.g., autistics, schizophrenics, etc.) are of considerable interest because of their promise as a contrastive model of typicality. This course will focus on these aspects of sociality both at the level of the interpersonal and personal (cognitive and phenomenological) and the sub-personal (neuroscientific). By term's end, students in this class will develop a deep understanding of several dimensions of social cognition research and its implications for the next generation of cognitive neuroscience. Each student will articulate a research problem and develop a method for investigating it through independent and collaborative means of practicing their research, critical thinking, writing and communication skills. Offered as COGS 305 and COGS 405.

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 and 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. Counts as SAGES Departmental Seminar.

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 314. Second Language Acquisition II: Second Language Acquisition Research and Second Language Teaching. 3 Units.

This course will examine various issues in second language acquisition research that are particularly relevant to foreign language teaching and learning. Topics covered will include: the role of input (listening/reading) vs. output (speaking/writing); implicit vs. explicit learning; negative vs. positive evidence (including the role of error correction); affective factors (motivation, anxiety); individual differences; teachability hypothesis and syllabus construction, program design/evaluation, language testing, among others. The purpose of this course is to survey the principal research in the acquisition of second language that is relevant to second language teaching in a classroom setting, and to obtain the state-of-the-art knowledge of the SLA research literature that is relevant to L2 teaching. The focus is not necessarily on the practical application of the SLA research, although we will not exclude discussion of classroom application. Rather, we critically examine and evaluate SLA research and come up with our own syntheses with respect to various issues. To achieve this goal, we should ask following questions in reading and discussing the relevant literature: 1) What are the main claims that the author(s) make(s)? 2) Are the author's claims sound? If not why? 3) What further research is needed to answer remaining questions? 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. The students are required to complete a term project that addresses the issues treated in the course. Offered as LING 302, LING 402, COGS 314 and COGS 414. Prereq: COGS 301 or requisites not met permission.

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. Counts as SAGES Departmental Seminar.

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. Counts for CAS Global & Cultural Diversity Requirement.

COGS 319. Elements of Surprise. 3 Units.

This course will connect research into the cognitive experiences of surprise and suspense with the ways people can create those experiences for each other—cooperatively and uncooperatively—in everyday interaction and in cultural products like jokes, architecture, music, written narratives, films, and games. Topics include predictions and expectations involved in perceiving and navigating the physical world, cognitive biases, timing in conversation, language processing, attention, perspective-taking, counterfactual thinking, the psychological structure of explanations, and the psychology of "fair play." Offered as COGS 319 and COGS 419.

COGS 322. Human Learning and the Brain. 3 Units.

This course focuses on the question, "How does my brain learn and how can its learning best be facilitated?" Each student is required to develop a comprehensive theory about personal learning. These theories will take the form of a major paper which will be expanded and modified throughout the semester. Readings and class discussions will focus on the following topics: learning and education systems, major structures of the brain and their role in learning, neuronal wiring of the brain and how learning changes it, the emotional brain and its essential role in learning, language and the brain, the role of images in learning, memory and learning (and related pathologies, such as PTSD). Students are expected to incorporate information on these topics into their personal theory of learning. In so doing, students are expected to articulate meaningful questions, skillfully employ research and apply their own knowledge to address such questions, produce clear, precise academic prose to explicate their ideas, and provide relevant and constructive criticism during class discussions. 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, COGS 427 and MLIT 327. Counts as SAGES Departmental Seminar.

COGS 330. Cognition and Computation. 3 Units.

An introduction to (1) theories of the relationship between cognition and computation; (2) computational models of human cognition (e.g. models of decision-making or concept creation); and (3) computational tools for the study of human cognition. All three dimensions involve data science: theories are tested against archives of brain imaging data; models are derived from and tested against datasets of e.g., financial decisions (markets), legal rulings and findings (juries, judges, courts), legislative actions, and healthcare decisions; computational tools aggregate data and operate upon it analytically, for search, recognition, tagging, machine learning, statistical description, and hypothesis testing. Offered as COGS 330, COGS 430, DSCI 330 and DSCI 430.

COGS 331. Introduction to Applied Linguistics. 3 Units.

This course provides students with answers to the question, "Linguistics? What can you do with that?" We will survey the ways that linguistics has been used (i.e. applied) to solve 'real world' problems. Some of these, like computational linguistics and the teaching of language, are intimately involved in language, even though they do not necessarily concern themselves with linguistic theory. Others, such as language and the law, use linguistics as a tool to do their work. We will be concerned with understanding the various ways that linguistic inquiries have been used or neglected, and also with the implications of applied fields for linguistic theories. Offered as LING 309, LING 409, COGS 331 and COGS 431. Counts for CAS Global & Cultural Diversity Requirement.

COGS 335. Japanese Linguistics. 3 Units.

The purpose of this course is to survey the principal research in Japanese linguistics for students who have basic knowledge of Japanese and are interested in more in-depth treatment of linguistic phenomena (phonetics, phonology, morphology, syntax, semantics, etc.). Lectures and discussions will cover many different aspects of the Japanese language. There is a great deal of analytic studies of the Japanese language done both inside and outside Japan, which will be surveyed in this course. Students will become familiar with the major issues through lectures and class discussions, as well as through their reading of both primary and secondary sources. Both formal and functional approaches to the analysis of Japanese will be examined, and the acquisition of these structures will also be discussed. The course will also be useful for the improvement of students' Japanese language proficiency. Recommended preparation: JAPN 101 and JAPN 102, or equivalent competence in Japanese. Offered as COGS 335, COGS 435, JAPN 435, LING 335 and LING 435. Counts for CAS Global & Cultural Diversity Requirement.

COGS 348. Buddhism and Cognitive Science. 3 Units.

In 1987, the Dalai Lama initiated a yearly event—Mind and Life Dialogues—to address "critical issues of modern life at the intersection of scientific and contemplative understanding". Dialogue topics included issues related to Buddhist thought and practice, and cognitive science. Others with an interest in the intersection of Buddhism and cognitive science, such as Robert Wright in *Why Buddhism is True: The Science and Philosophy of Meditation and Enlightenment* (2017), argue that non-supernatural aspects of Buddhism, such as the benefits of mindfulness meditation and the nature of the (non-)self, are affirmed by cognitive science and evolutionary psychology. The notion that at least some aspects of Buddhism are "true" in relation to contemporary cognitive scientific views of mind and brain has attracted considerable attention from both Buddhist practitioners and cognitive scientists. This seminar explores Buddhist and cognitive science perspectives on issues such as embodied cognition, consciousness, mind, self and personal identity, theory of mind, morality, representation, and language. We start with a general overview of Buddhist philosophy, and then turn to specific readings on Buddhist concepts in relation to similar concepts found in the cognitive science literature. For instance, we will explore the Buddhist concept of no permanent self or soul (an-tman). This idea resonates with Daniel Dennett's notion of the "narrative self" and the cognitive neuroscience view that there is no neurological center of self or experience. Although the specific concepts covered will vary in each iteration of this course, readings will always be drawn from both Buddhist primary and secondary readings, and from the cognitive science literature. Offered as COGS 348, COGS 448, RLGN 348 and RLGN 448. Counts for CAS Global & Cultural Diversity Requirement. Prereq: Completion of one COGS or RLGN course or Requisites Not Met permission.

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. Counts for CAS Global & Cultural Diversity Requirement.

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, CSDS 478, EBME 478, ECSE 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, 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.

COGS 390. Introduction to General Semiotics. 3 Units.

Semiotics, the study of meaning and signs conveying meaning, is a central part of cognitive semiotics, 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.

COGS 399. Independent Studies in Cognitive Science. 1 - 3 Units.

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 405. Social Cognition and the Brain. 3 Units.

Human beings develop intricate means of presenting themselves to others; of representing others as friends, enemies, or strangers; of making quick assessments of any situation based on the attribution of intentions; of sizing up the Other via symbols and other shibboleths; and of the disposition and ability to empathize and sympathize with the emotional states of others for specific purposes. In recent years, the role of culture and cultural diversity has come to play a significant role in thinking about social cognition and the evolution of sociality. It is likewise an unfortunate fact that many human beings lack many of the means, abilities, and dispositions to connect with one another easily and without extensive and explicit tutelage. Such clinical populations (e.g., autistics, schizophrenics, etc.) are of considerable interest because of their promise as a contrastive model of typicality. This course will focus on these aspects of sociality both at the level of the interpersonal and personal (cognitive and phenomenological) and the sub-personal (neuroscientific). By term's end, students in this class will develop a deep understanding of several dimensions of social cognition research and its implications for the next generation of cognitive neuroscience. Each student will articulate a research problem and develop a method for investigating it through independent and collaborative means of practicing their research, critical thinking, writing and communication skills. Offered as COGS 305 and COGS 405.

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 and 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. Counts as SAGES Departmental Seminar.

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 414. Second Language Acquisition II: Second Language Acquisition Research and Second Language Teaching. 3 Units.

This course will examine various issues in second language acquisition research that are particularly relevant to foreign language teaching and learning. Topics covered will include: the role of input (listening/reading) vs. output (speaking/writing); implicit vs. explicit learning; negative vs. positive evidence (including the role of error correction); affective factors (motivation, anxiety); individual differences; teachability hypothesis and syllabus construction, program design/evaluation, language testing, among others. The purpose of this course is to survey the principal research in the acquisition of second language that is relevant to second language teaching in a classroom setting, and to obtain the state-of-the-art knowledge of the SLA research literature that is relevant to L2 teaching. The focus is not necessarily on the practical application of the SLA research, although we will not exclude discussion of classroom application. Rather, we critically examine and evaluate SLA research and come up with our own syntheses with respect to various issues. To achieve this goal, we should ask following questions in reading and discussing the relevant literature: 1) What are the main claims that the author(s) make(s)? 2) Are the author's claims sound? If not why? 3) What further research is needed to answer remaining questions? 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. The students are required to complete a term project that addresses the issues treated in the course. Offered as LING 302, LING 402, COGS 314 and COGS 414. Prereq: COGS 401 or requisites not met permission.

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. Counts as SAGES Departmental Seminar.

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. Counts for CAS Global & Cultural Diversity Requirement.

COGS 419. Elements of Surprise. 3 Units.

This course will connect research into the cognitive experiences of surprise and suspense with the ways people can create those experiences for each other—cooperatively and uncooperatively—in everyday interaction and in cultural products like jokes, architecture, music, written narratives, films, and games. Topics include predictions and expectations involved in perceiving and navigating the physical world, cognitive biases, timing in conversation, language processing, attention, perspective-taking, counterfactual thinking, the psychological structure of explanations, and the psychology of "fair play." Offered as COGS 319 and COGS 419.

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, COGS 427 and MLIT 327. Counts as SAGES Departmental Seminar.

COGS 430. Cognition and Computation. 3 Units.

An introduction to (1) theories of the relationship between cognition and computation; (2) computational models of human cognition (e.g. models of decision-making or concept creation); and (3) computational tools for the study of human cognition. All three dimensions involve data science: theories are tested against archives of brain imaging data; models are derived from and tested against datasets of e.g., financial decisions (markets), legal rulings and findings (juries, judges, courts), legislative actions, and healthcare decisions; computational tools aggregate data and operate upon it analytically, for search, recognition, tagging, machine learning, statistical description, and hypothesis testing. Offered as COGS 330, COGS 430, DSCI 330 and DSCI 430.

COGS 431. Introduction to Applied Linguistics. 3 Units.

This course provides students with answers to the question, "Linguistics? What can you do with that?" We will survey the ways that linguistics has been used (i.e. applied) to solve 'real world' problems. Some of these, like computational linguistics and the teaching of language, are intimately involved in language, even though they do not necessarily concern themselves with linguistic theory. Others, such as language and the law, use linguistics as a tool to do their work. We will be concerned with understanding the various ways that linguistic inquiries have been used or neglected, and also with the implications of applied fields for linguistic theories. Offered as LING 309, LING 409, COGS 331 and COGS 431. Counts for CAS Global & Cultural Diversity Requirement.

COGS 435. Japanese Linguistics. 3 Units.

The purpose of this course is to survey the principal research in Japanese linguistics for students who have basic knowledge of Japanese and are interested in more in-depth treatment of linguistic phenomena (phonetics, phonology, morphology, syntax, semantics, etc.). Lectures and discussions will cover many different aspects of the Japanese language. There is a great deal of analytic studies of the Japanese language done both inside and outside Japan, which will be surveyed in this course. Students will become familiar with the major issues through lectures and class discussions, as well as through their reading of both primary and secondary sources. Both formal and functional approaches to the analysis of Japanese will be examined, and the acquisition of these structures will also be discussed. The course will also be useful for the improvement of students' Japanese language proficiency. Recommended preparation: JAPN 101 and JAPN 102, or equivalent competence in Japanese. Offered as COGS 335, COGS 435, JAPN 435, LING 335 and LING 435. Counts for CAS Global & Cultural Diversity Requirement.

COGS 448. Buddhism and Cognitive Science. 3 Units.

In 1987, the Dalai Lama initiated a yearly event—Mind and Life Dialogues—to address "critical issues of modern life at the intersection of scientific and contemplative understanding". Dialogue topics included issues related to Buddhist thought and practice, and cognitive science. Others with an interest in the intersection of Buddhism and cognitive science, such as Robert Wright in *Why Buddhism is True: The Science and Philosophy of Meditation and Enlightenment* (2017), argue that non-supernatural aspects of Buddhism, such as the benefits of mindfulness meditation and the nature of the (non-)self, are affirmed by cognitive science and evolutionary psychology. The notion that at least some aspects of Buddhism are "true" in relation to contemporary cognitive scientific views of mind and brain has attracted considerable attention from both Buddhist practitioners and cognitive scientists. This seminar explores Buddhist and cognitive science perspectives on issues such as embodied cognition, consciousness, mind, self and personal identity, theory of mind, morality, representation, and language. We start with a general overview of Buddhist philosophy, and then turn to specific readings on Buddhist concepts in relation to similar concepts found in the cognitive science literature. For instance, we will explore the Buddhist concept of no permanent self or soul (an-tman). This idea resonates with Daniel Dennett's notion of the "narrative self" and the cognitive neuroscience view that there is no neurological center of self or experience. Although the specific concepts covered will vary in each iteration of this course, readings will always be drawn from both Buddhist primary and secondary readings, and from the cognitive science literature. Offered as COGS 348, COGS 448, RLGN 348 and RLGN 448. Counts for CAS Global & Cultural Diversity Requirement. Prereq: Completion of one COGS or RLGN course or Requisites Not Met permission.

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. Counts for CAS Global & Cultural Diversity Requirement.

COGS 499. Independent Studies. 1 - 3 Units.

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 M.A.. 1 - 6 Units.

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

<http://psychsciences.case.edu>
Heath Demaree, Department Chair
heath.demaree@case.edu

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 communication for health professionals. For graduate students, our Psychology Program offers accredited doctoral training in clinical psychology and experimental psychology within our Developmental, Cognitive and Affective Sciences Program. 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
Phone: 216.368.2686

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.

Department Faculty

Heath A. Demaree, PhD
(Virginia Polytechnic Institute and State University)
Professor and Chair
Cerebral and psychophysiological bases of emotion

Jennifer L. Butler, PhD
(Case Western Reserve University)
Instructor
Social psychology

Lauren Calandrucchio, PhD
(Syracuse University)
Associate Professor
Audiology

Angela Hein Ciccio, PhD
(Case Western Reserve University)
Associate 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

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, Jack, Joseph and Morton 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

Sarah Hope Lincoln, PhD
(Harvard University)
Assistant Professor
Social factors implicated in the etiology, trajectory, and treatment of mental illness

Brooke Macnamara, PhD
(Princeton University)
Associate Professor
Cognitive psychology, skill acquisition, learning, human performance, working memory, cognitive control, bilingualism, and communication

Kathryn (Kay) McNeal, MS, CCC-SLP
(Purdue University)
Instructor
Speech-language pathology

Rachel Mulheren, PhD
(James Madison University)
Assistant Professor
Physiology of swallowing and treatment of swallowing disorders

Jean Nisenbom, MA
(Miami University)
Instructor
Dysphagia; diagnosis of speech

Rita Obeid, PhD
(City University of New York)
Instructor
Predictors influencing language difficulties in school-aged children;
predictors of stigma among people with disabilities

James C. Overholser, PhD
(Ohio State University)
Professor
Adult psychopathology; depression; suicide; personality disorders

Amy Przeworski, PhD
(Pennsylvania State University)
Associate 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

Lee A. Thompson, PhD
(University of Colorado, Boulder)
Professor; Associate Dean, College of Arts and Sciences
Human behavior genetics; child development

Lecturer

Patrice O. Carothers, MS, CCC-A
(Ithaca College)
Part-time Lecturer
Fluency disorders

Adjunct Faculty

Kelly Bhatnagar, PhD
(Case Western Reserve University)
Adjunct Assistant Professor; The Emily Program

Rachel Berkowitz, MA, CCC-SLP
Adjunct Instructor; Mayfield City School District

Laura Brady
Adjunct Instructor; Cleveland Hearing and Speech Center

Lisa Bruening
Adjunct Instructor; ALS Association

Jane R. Buder-Shapiro, PhD
Adjunct Assistant Professor; private practice

Barbara Choudhury, MA, CCC-SLP
(Case Western Reserve University)
Adjunct Instructor; Cleveland Hearing & Speech Center
Speech-language pathology

Kelly Christian, PhD
(Case Western Reserve University)
Adjunct Assistant Professor; Lawrence School

Michael Christie
Adjunct Assistant Professor; Private Law Practice

Tori Cordiano, PhD
(CWRU)
Adjunct Assistant Professor; private practice

Matthew Daly, PhD
Adjunct Assistant Professor; Ohio Department of Mental Health

Barbara Ekelman, PhD
Adjunct Associate Professor; PT MED - Pediatrics
Pediatrics

Christine Elliot, PhD
Adjunct Assistant Professor; Renew Psychological Services

Thomas Ference, PhD
Adjunct Assistant Professor; Northcoast Behavioral Healthcare

Michelle Foye, MA, CCC-SLP
(Kent State University)
Adjunct Instructor; Cleveland Hearing & Speech Center
Speech-language pathology

Thomas Frazier, PhD
Adjunct Assistant Professor; The Cleveland Clinic

Zara Gennert, PhD
Adjunct Instructor; University Hospitals Richmond Medical Center

Nicole Gerami
Adjunct Instructor; Western Reserve Speech and Language Partners

Clare Gideon, PhD
Adjunct Assistant Professor; Louis Stokes VA Medical Center

Bernard P. Henri, PhD
(Northwestern University)
Adjunct Professor; Retired
Fluency disorders; professional issues in speech-language pathology;
health care management

Alan Ho, PhD
(Case Western Reserve University)
Adjunct Assistant Professor; Cleveland State University

Emily Hornack
Adjunct Instructor; MetroHealth Medical Center

Vanessa Jensen
Adjunct Assistant Professor; The Cleveland Clinic

Karen Kantzes, AuD, CCC-A
(A. T. Stills University)
Adjunct Instructor; Cleveland Hearing & Speech Center
Audiology

Susan Klein, PhD
Adjunct Associate Professor; Akron Children's Hospital

Susan M. Knell, PhD
Adjunct Assistant Professor; private practice

Marilyn Malkin, PhD
Adjunct Assistant Professor; private practice

Michael Manos, PhD
(University of Arizona)
Adjunct Assistant Professor; The Cleveland Clinic

Lauren Masuga, MA, CCC-SLP
(Miami University)
Adjunct Instructor; Cleveland Hearing & Speech Center
Speech-language pathology

AnnaMaria McLaughlin, PhD
(Case Western Reserve University)
Adjunct Assistant Professor; Independent Researcher

Rebecca Mental, PhD
(Case Western Reserve University)
Adjunct Assistant Professor; Cleveland Hearing and Speech Center

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

Nina Rytwinski, PhD
Adjunct Instructor; Private Practice

Philip Safford, PhD
Adjunct Professor; Professor Emeritus Kent State University

Jes Sellers, PhD
Adjunct Assistant Professor; private practice

Jeremy Shapiro, PhD
Adjunct Assistant Professor; Advanced Therapy Center

Harry Sivec, PhD
Adjunct Assistant Professor; Northcoast Behavioral Healthcare

Kevin Smith, PhD
Adjunct Assistant Professor; Northcoast Behavioral Healthcare

Sarah Spannagel, PhD
Adjunct Assistant Professor; Rainbow Babies and Children's Hospital

Tira Stebbins, PhD
Adjunct Assistant Professor; Organization for Psychological Health

Kenneth Weiss, PhD
Adjunct Assistant Professor; Louis Stokes Cleveland VA Medical Center

Karen White, PhD
Adjunct Assistant Professor; Louis Stokes Cleveland VA Medical Center

Brigid Whitford, AuD, CCC-A
(A.T. Stills University)
Adjunct Instructor; Cleveland Hearing & Speech Center
Audiology

Lucene Wisniewski, PhD
Adjunct Assistant Professor; The Emily Program

Secondary Faculty

Britt Nielsen
Associate Professor; School of Medicine - Psychiatry

Jennifer Anderson, PhD
Clinical Instructor; School of Medicine - Pediatrics

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 Heinberg, Ph.D.
Professor; Cleveland Clinic Lerner College of Medicine of CWRU

Monica Hooper, PhD
Professor; MED - Division of General Medical Sciences

Alissa Huth-Bocks, PhD
Professor; School of Medicine - Pediatrics

Anthony Jack, PhD
(University College London)
Associate Professor, Department of Philosophy

Gunnur Karakurt, PhD
Assistant Professor; MED - Family Medicine

Cynthia Kubu, PhD
Professor; Psychiatry - Psychology, Cleveland Clinic

Carolyn Landis, PhD
Associate Professor, School of Medicine/Rainbow Babies and Children's Hospital

Aarti Pyati, PhD
(University of Chicago)
Adjunct Assistant Professor; University Counseling Services

Natalie Reiss, PhD
Clinical Instructor; CWRU - University Counseling Services

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

Kathleen Ashton, PhD
(Ohio State University)
Clinical Instructor
Bariatrics

Karen Kernberg Bardenstein, PhD
Adjunct Assistant Professor; private practice

Karen Broer, PhD
Clinical Instructor; Cleveland Clinic

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

Tom Hagesfeld, PhD
Clinical Assistant Professor; The Joint Commission in Behavioral Healthcare

Gerald Hayes, PhD
Clinical Instructor; Baldwin Wallace University

Maureen Kreick, PhD
Clinical Instructor; Private Practice

Maryann McGlenn, PhD
Clinical Instructor; CWRU - University Counseling Services

Pamela Nilsson, PhD
Clinical Instructor; Psychological & Behavioral Consultants

Richard Pazol, PhD
Clinical Instructor; Director, 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 Management Associates, Inc.

Terry Tobias, PhD
Clinical Assistant Professor; private practice

Kelly Wadeson, PhD
Clinical Instructor; Metro - Rehabilitation

Stacy Williams, PhD
Adjunct Associate Professor; private contractor

Emeritus

Douglas K. Detterman, PhD
(University of Alabama, Tuscaloosa)
Louis D. Beaumont University Professor Emeritus

Donald K. Freedheim, PhD
(Duke University)
Professor Emeritus

Jane Kessler, PhD
(Western Reserve University)
Lucy Adams Leffingwell Professor Emerita

Milton E. Strauss, PhD
(Harvard University)
Professor Emeritus

Communication Sciences

Major in Communication Sciences

(Effective July 1, 2019 for those students who matriculate Fall 2019 or later)

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)

First Year	Units	
	Fall	Spring
General Psychology I (PSCL 101)	3	
Introduction to Communication Disorders (COSI 109)*		3
Year Total:	3	3

Second Year	Units	
	Fall	Spring
Phonetics and Phonology (COSI 211)	3	
Multicultural Aspects of Human Communication (COSI 260)	3	
Child Psychology (PSCL 230)	3	
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	Units	
	Fall	Spring
Language Development (COSI 313)	3	
Anatomy and Physiology of Speech and Hearing Mechanism (COSI 325)	3	
Research Design and Analysis (PSCL 375)	3	
Speech and Hearing Science (COSI 321)		3
Year Total:	9	3

Fourth Year	Units	
	Fall	Spring
Introduction to Clinical Practice in Speech-Language Pathology (COSI 352)	3	
Introduction to Audiology (COSI 370)	3	
Communication and Aging (COSI 345)		3
Year Total:	6	3

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
or PSCL 282	Quantitative Methods in Psychology	
PSCL 375	Research Design and Analysis	3

Additional information is available from each student's academic advisor.

Integrated Graduate Studies

The Integrated Graduate Studies (IGS) Program (<http://bulletin.case.edu/undergraduatestudies/gradprofessional/#accelerationtowardgraduatedegreeestext>) 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

Communication for Health Professionals Minor

The Communication for Health Professionals minor offers introductory and advanced study in theoretical and practical applications 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	Advanced 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 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 consisting of PSCL 101 General Psychology I and PSCL 282 Quantitative Methods in Psychology; two nomothetic courses; and two idiographic courses. The remaining 12 credits of elective course work can be drawn from 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)

PSCL 101	General Psychology I	3
PSCL 282	Quantitative Methods in Psychology	3
Select 2 of the following nomothetic courses (total of 6 credit hours)		
PSCL 315	Social Psychology	3
PSCL 352	Physiological Psychology	3

PSCL 353	Psychology of Learning	3
PSCL 357	Cognitive Psychology	3

Select 2 of the following idiographic courses (total of 6 credit hours)

PSCL 230	Child Psychology	3
PSCL 313	Psychology of Personality	3
PSCL 321	Abnormal Psychology	3
PSCL 325	Psychotherapy and Personality Change	3
PSCL 369	Adult Development and Aging	3
Select elective courses (any combination of additional PSCL courses, total of 12 credit hours)*		12

* 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.

Requirements for a Psychology Minor

Students who wish to minor in psychology must take General Psychology I (PSCL 101), plus a minimum of four other PSCL courses (<http://psychsciences.case.edu/undergraduate/psychology/undergrad-psych-courses/>), for a total of 15 hours. Students choose these courses in collaboration with their advisor. Practica and independent study are available, but may not be used to satisfy the minor requirement. Students must take at least 50% of their PSCL courses at CWRU.

Declaring a Psychology Major or Minor

Students who wish to major in psychology must complete a Major Declaration Form, available from the Office of Undergraduate Studies (<http://www.case.edu/ugstudies/>), and then meet with Dr. Jennifer Butler, 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 30 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 contact 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://psychsciences.case.edu/graduate/>). However, prospective IGS Program students are not required to submit GRE scores. The application deadline each year is December 1 (for admission the following fall).

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/#accelerationtowardgraduatedegreesext>) or contact Dr. Heath Demaree.

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 in speech-language pathology is accredited by the Council on Academic Accreditation in Audiology and Speech-Language Pathology (CAA) of the American Speech-Language-Hearing Association, 2200 Research Boulevard #310, Rockville, Maryland 20850, 800-498-2071 or 301-296-5700. 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 and 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 Jack, Joseph, and Morton 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.

Psychology

Doctor of Philosophy

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 Program. 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.

Developmental, Cognitive, and Affective Sciences Program. Doctoral training in developmental, cognitive, and affective sciences prepares the student for an academic career in teaching and research. The program offers concentrations in developmental psychology, adulthood and aging, cognitive psychology, developmental disabilities research, and social psychology. Faculty members help students develop flexible programs of study, according to individual interests.

Master of Arts

The Department of Psychological Sciences also offers a full-time program leading to an MA in developmental psychology. Students interested in working with very young children would be ideal for this program. Participation in this program will allow students to be eligible for an Early Intervention Services Certificate (Developmental Specialist) through the Ohio Department of Developmental Disabilities.

Developmental Psychology MA Program. The department's program in developmental psychology is an applied program that provides students with the hands-on skills and practical experience needed to work in early intervention with children aged 0 to 5.

Degree requirements include the completion of 38 credits of course work and placements, with 13 of these credits fulfilling the requirement of the Ohio Early Intervention Services Certificate. Students will be given opportunities to train in multiple placement sites, including hospital, school, and clinical settings. For more information, please visit <https://psychsciences.case.edu/ma-in-developmental-psychology-with-an-early-intervention-specialization/>.

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 course incorporates non-verbal communication techniques, intermediate vocabulary, grammatical rules and conversational skills. Deaf culture and history is also an important part of the course. Students will focus on general aspects of conversational signs and nonverbal aspects of American Sign Language. Using Signing Naturally Units 7-12 as a guide; students will also incorporate the use of expressive and receptive skills in every class. The full immersion model will be applied in each class. Instruction and student participation will only be in ASL. 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. Counts for CAS Global & Cultural Diversity Requirement.

COSI 261. Multicultural Aspects of Communication Disorders. 3 Units.

Introduces intercultural/interracial communication principles and includes the exploration of differences in perceptions for communication messages. Provides students with a basic understanding of the differences associated with assessment, intervention, and identification of communication disorders for culturally and linguistically diverse populations. Students will critically analyze best practice approaches for communication disorders for diverse populations including differences in race, ethnicity/culture, sexual orientation, gender identity, and socio-economic status. Practical outcomes that can encourage more positive intercultural/interracial encounters will be discussed. Offered as COSI 261 and COSI 461. Counts for CAS Global & Cultural Diversity Requirement.

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, FSCC, 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 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 305. Neuroscience of Communication and Communication Disorders. 3 Units.

The course focus is neuroanatomy and neurophysiology related to motor control and cognition, particularly aspects of cognition involved in language functions. Topics to be addressed include: principles of neurophysiology and neurochemistry; functional neuroanatomy of the central and peripheral nervous systems; neurological and neuropsychological assessment of communication; neurodiagnostic methods. In part, the course material will be presented in a problem-based learning format. That is, normal aspects of human neuroscience will be discussed in the context of neurological disorders affecting communication. COSI 305 is an elective for undergraduate students. COSI 405 is an introduction to COSI 557 and COSI 561, and a required course for graduate students. Offered as COSI 305 and COSI 405.

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 be literate in a variety of persuasion strategies and dynamics.

COSI 340. Advanced 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. 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 321 and COSI 325.

COSI 390. Independent Study. 1 - 6 Units.

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 395 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, 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 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 405. Neuroscience of Communication and Communication Disorders. 3 Units.

The course focus is neuroanatomy and neurophysiology related to motor control and cognition, particularly aspects of cognition involved in language functions. Topics to be addressed include: principles of neurophysiology and neurochemistry; functional neuroanatomy of the central and peripheral nervous systems; neurological and neuropsychological assessment of communication; neurodiagnostic methods. In part, the course material will be presented in a problem-based learning format. That is, normal aspects of human neuroscience will be discussed in the context of neurological disorders affecting communication. COSI 305 is an elective for undergraduate students. COSI 405 is an introduction to COSI 557 and COSI 561, and a required course for graduate students. Offered as COSI 305 and COSI 405.

COSI 406. Academic English Proficiency: Speech Production. 3 Units.

In this module the provisional student will work in small groups with the instructor/s to develop new speech habits and patterns to improve production of spoken English for academic and professional success. Following successful completion of the course the student will demonstrate an improvement of 50% from baseline speech production scores, and demonstrate the ability to practice sound production independently to assure continued refinement over time. The course includes 90 minutes of small group instructions per week and a minimum of 50-60 minutes of daily practice. The student will be required to submit a minimum of 2 practice recordings per week for feedback. Students who successfully complete this course will demonstrate 50% improvement from baseline speech production scores.

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 416. Academic English Proficiency Speech Production Module II. 3 Units.

In this module the provisional graduate student will work on refining speech production skills necessary for effective conversation and oral presentations in the academic and professional environments, through direct individualized instruction and individual and group practice. Each student enrolled will have an individualized plan and targets based on testing of spoken language at the word, sentence and conversational level. The focus in Module II will include: 1. Instruction on use of appropriate vocal measures such as volume, rate, intonation, rhythm and projection techniques 2. Development of the skills necessary to analyze ones own speech production skills including articulation, volume, rate, and inflection consistent with Standard American English 3. Practice of speech production skills in conversation and short presentations. Successful completion of this module will assist the student in improving speech production and intelligibility in areas of articulation, rate, and prosody, in conversation and formal presentations, leading to increased successful communication in the academic and professional environments. In this module each provisional graduate student will be involved in 90 minutes of class time weekly and a minimum of 50 minutes per day of structured individualized homework assignments. Classroom instruction will be provided in small groups with a maximum of 4 students per group. The successful student will demonstrate achievement of their individual targets which includes a minimum of 85% sentence level intelligibility in conversation and a rate of 140-160 wpm in presentations. If a student does not pass the course they have opportunity to work with the instructor and resubmit assignments until success levels are met.

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. Advanced 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 443. Meta-Analysis of Communication Disorders Research Workshop. 1 Unit.

This course will guide students through the application of meta-analysis to the systematic literature review completed in COSI 444L to address a clinical question and will serve as the analysis and results section of the paper which will be used in partial fulfillment of the Plan B Master's Project requirements. Prereq: COSI 444 and COSI 444L.

COSI 444. Evidence Based Practice in Communication Disorders. 2 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 444L. Evidence Based Practice in Communication Disorders Lab. 1 Unit.

This course will guide students through the application of meta-analysis to the systematic literature review completed in COSI 444L to address a clinical question and will serve as the analysis and results section of the paper which will be used in partial fulfillment of the Plan B Masters Project requirements. Prereq: COSI 444.

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.

Nature and characteristics of language disorders in children. Theoretical and clinical issues related to effective intervention with children and their families. Assessment and treatment of disorders of syntax, semantics and pragmatics. Strategies for intervention with children from special populations and multicultural populations.

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. Instructor consent for COSI 457 only. Offered as COSI 357 and COSI 457.

COSI 461. Multicultural Aspects of Communication Disorders. 3 Units.

Introduces intercultural/interracial communication principles and includes the exploration of differences in perceptions for communication messages. Provides students with a basic understanding of the differences associated with assessment, intervention, and identification of communication disorders for culturally and linguistically diverse populations. Students will critically analyze best practice approaches for communication disorders for diverse populations including differences in race, ethnicity/culture, sexual orientation, gender identity, and socio-economic status. Practical outcomes that can encourage more positive intercultural/interracial encounters will be discussed. Offered as COSI 261 and COSI 461. Counts for CAS Global & Cultural Diversity Requirement.

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 563. Medical Aspects of Speech Pathology IV: Pediatric Dysphagia. 3 Units.

This course focuses on swallowing and dysphagia in infants and children. Topics include typical development of anatomy and physiology of pediatric swallowing, evaluation of pediatric swallowing function, treatment modalities, and clinical populations. Prereq: COSI 562.

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 Units.

Topics and instructors by arrangement of the department chair.

COSI 601. Directed Study and Research. 1 - 6 Units.

Individual study and research under the direction of a faculty member.

COSI 651. Thesis M.A.. 1 - 6 Units.

(Credit as arranged.)

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 Units.

(Credit as arranged.) 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.

Empirical studies of typical human responses to situations. First impressions, attitude change, effects of cash incentives, behavior in emergencies, interpersonal attraction, impression management, crowding, stress, vices. Recommended preparation: PSCL 101.

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.

Major syndromes of mental disorders, their principal symptoms, dynamics, etiology, and treatment. Recommended preparation: PSCL 101.

PSCL 323. Consumer Psychology. 3 Units.

Examines psychological processes that affect buyer behaviors. Covers the basic psychological processes of purchasing behavior, marketing choices that influence consumer behaviors, and post-purchase behaviors such as brand loyalty. Explores behavior across a number of domains, including motivation, attention, persuasion, comprehension, automatic decision making, and biases. Recommended preparation: PSCL 101.

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 course is an elective. Recommended preparation: PSCL 101. 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. Offered as PSCL 350 and PSCL 450.

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. Offered as PSCL 352 and PSCL 403. 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.

The psychological and physiological processes entering into perception. Current research and theory in the light of classical statements of the problems. The role of learning in perceptual functioning. Reading, lectures, demonstrations, and problems. Recommended preparation: PSCL 101.

PSCL 357. Cognitive Psychology. 3 Units.

How individuals encode, store, organize, and use information. Pattern recognition, attention, memory, and problem solving. Recommended preparation: PSCL 101.

PSCL 365. Psychology of Religion and Spirituality. 3 Units.

This course is designed to provide an undergraduate-level overview of the psychology of religion and spirituality. It will emphasize both theory and research in this topic area. Following the order outlined in the text for the course, we will cover religion/spirituality "from the inside out," beginning with biological aspects of r/s and working outward, all the way up to social aspects of r/s. The course will be primarily lecture- and textbook-based but will also include both large-group and small-group discussion. Grading will be based on three exams (with the lowest score dropped), a required final exam, and a variety of assignments. A major aim of the course is to encourage students to apply ideas from the course to their lives; however, because some issues raised in the class might be very personal and/or controversial, the class will not require personal sharing about r/s beliefs (in either discussion or written form). In designing the assignments, care has been taken to provide a menu of options that vary in terms of length/complexity and emphasis on personal experience vs. more abstract reflection. Prereq: PSCL 101.

PSCL 369. 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.

Conceptual and methodological issues confronted by the behavioral scientist conducting research. Major experimental designs and statistical procedures. Intuitive understanding of the mathematical operations. Majors planning to apply to graduate school in Psychology are strongly encouraged to complete this course. Counts as SAGES Departmental Seminar. Prereq: PSCL 101 and (PSCL 282 or ANTH 319 or STAT 201 or STAT 201R).

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. Offered as PSCL 379 and PSCL 479.

PSCL 382. Psychological Measurement. 3 Units.

The problems and methods of measuring behavior. Scaling theory, rating methods, and the theoretical basis of psychological testing. Recommended preparation: PSCL 282.

PSCL 387. Psychology Capstone Seminar: Genocide and Mass Atrocities. 3 Units.

Human cruelty, ethnopolitical conflict, war, terrorism, and genocide continues presently to create destruction and suffering throughout the world. Psychology has an important role in contributing to an understanding of individual or group characteristics, and specific circumstances and psychological processes that lead individuals and groups to commit either acts of destruction or acts of goodness. This course will provide an overview of the psychological literature on genocide, mass atrocities and violence. Most people are aware of the Holocaust and less so regarding other past genocides. We will examine and discuss past genocides (e.g. the Holocaust and Rwanda among others) as well as present genocides and mass violence (e.g. Darfur, the mass killings of Yazidis, and other examples of violence, torture, and the mistreatment of human beings). The path from prejudice and hatred to mass violence will be explored. We will address rescuing behaviors and resistance during genocide and mass atrocities, as well as the impact of bystander behavior on human violence. In addition, we will explore how people can heal from the trauma of past victimization and the role of psychologists in this undertaking. Another important topic to be examined focuses on how an identity can be formed when one is a descendant of a genocide/mass atrocity survivor or perpetrator. We will also address how the past is remembered or forgotten. This course is a reading and writing intensive course. Counts as SAGES Senior Capstone. Prereq: PSCL 101 and at least 15 credit hours previously completed in PSCL.

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 Units.

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. Capstone: Anxiety and Depression: Symptoms, Etiology, and Treatment. 3 Units.

Satisfies SAGES Capstone requirement: 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 Senior Capstone. Prereq: PSCL 101 and PSCL 375.

PSCL 397. Independent Study. 1 - 3 Units.

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 399. Evaluating Psychological Information. 3 Units.

This course is a capstone designed to encourage advanced psychology students to review the knowledge they have gained throughout their coursework and to evaluate new information using this knowledge. While many core classes focus on learning the foundations of psychology through textbook readings and lectures, this class is a seminar that focuses on engaged and active participation in discussions and assignments during class. Class work will focus on evaluating psychological research, considering psychology as a field of scientific inquiry, understanding misconceptions about psychology and psychological findings, and exercising critical thinking skills. The course will culminate for each student in a unique SAGES capstone project, including a final written report and a public presentation. Independent work outside of the classroom will focus mostly on the capstone project, though you will also complete some class readings and reflection papers. Counts as SAGES Senior Capstone. Prereq: PSCL 375.

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 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. Offered as PSCL 352 and PSCL 403. 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.

Advanced research design and statistical analysis used in psychological research. Statistical inference from multiple variables, multiple correlation and regression, analysis of variance, nonparametric statistics.

Recommended preparation: PSCL 407.

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.

Theory and methods of human behavior measurements. Reliability, validity, and test construction in the objective assessments of traits and abilities. Recommended preparation: PSCL 282.

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.

Applied experience for clinical psychology graduate students in the cognitive assessment of children and adults. Recommended preparation: Concurrent enrollment in PSCL 425.

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 Unit.

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 432A. Early Intervention Graduate Practicum A: Foundations for Interpersonal Communication. 1 Unit.

This course is set up to provide students with information and practice in collaborative professional skills that are necessary for professional competence in a multidisciplinary world. Skill development will include inter-professional education (IPE) where students will take part in a CWRU-wide course and with students participating from a variety of disciplines (e.g., nursing, speech-language pathology, etc.). Students will develop attitudes and skills related to: 1. Promoting inter-professional practice and mutual respect 2. Inter-professional teamwork and communication 3. Understanding the roles and responsibilities of various individuals in early intervention.

PSCL 432B. Early Intervention Graduate Practicum B: School Practicum and Foundations for IPC. 1 Unit.

This course is part of a series of courses intended to offer students practical experience in the field of early intervention. As part of this course, students will be placed in a school setting and will gain professional experience related to working with young children and their families under professional supervision. This course is set up to provide students with information about, practice in, in addition to development and professional skills that are necessary towards achieving professional competence when with working with young children and families.

PSCL 432C. Early Intervention Graduate Practicum C: Medical Placement. 0 - 2 Units.

This course is part of a series of courses intended to offer students practical experience in the field of early intervention. Students will be placed in a medical setting where they will gain professional experience related to working with young children and their families under professional supervision. This course is set up to provide students with information about, practice in, in addition to development and professional skills that are necessary towards achieving professional competence when with working with young children and families.

PSCL 432D. Early Intervention Graduate Practicum D: Choice. 1 Unit.

This course is part of a series of courses intended to offer students practical experience in the field of early intervention. This course is the fourth in its series. At this point, students are allowed to choose their placement (e.g., medical, school). Students will gain further professional experience related to working with young children and their families under professional supervision in their placement of choice. This course is set up to provide students with information about, practice in, in addition to development and professional skills that are necessary towards achieving professional competence when with working with young children and families.

PSCL 433. Early Intervention Child Psychology: Infant and Toddler Development. 2 Units.

This course is an introductory graduate seminar on child development in the context of psychology, communication science, and social work. Mastery of the theoretical and empirical literature of developmental psychology is critical to the practice of effective social workers and speech language pathologists. Course Objectives: You will gain an appreciation for human development with a focus on the infancy period to adolescence. You will recognize milestones (behavioral, cognitive, physical) throughout the different stages of child development. You will learn about modern and classical psychological theory and gain an appreciation that these various theories all contribute uniquely and invaluable to our understanding of child development. You will learn about prominent research findings as well as research methods unique to the area of developmental psychology. You will be able to demonstrate mastery of the developmental literature and apply it to authentic performance/practice in your chosen field.

PSCL 434. Early Intervention I: Theories and Practice. 3 Units.

This course describes the characteristics of young children (aged between 0 to 5 years) with disabilities and examines the intervention models and practices that are used to address the developmental and social emotional needs of these children. The course covers the legislative and philosophical foundations for contemporary early intervention practice. It discusses the meaning of evidence-based practice and examines contemporary early intervention practices from this perspective. The readings and assignments for this course have been designed to reflect the course objectives.

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 450. 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. Offered as PSCL 350 and PSCL 450.

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 Units.

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 479. 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. Offered as PSCL 379 and PSCL 479.

PSCL 497. Graduate Independent Study. 1 - 9 Units.

Independent research and reading programs with individual members of the faculty.

PSCL 501. Seminar: Pediatric Psychology. 1 - 3 Units.

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 Units.

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 multiculturalism 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 529C. 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 534. Advanced Psychotherapy. 3 Units.

The goals of this course are: to provide an overview of a range of psychotherapeutic approaches, primarily those that address anxiety and depressive disorders, and to discuss the evidence for and implementation of such therapy approaches. Prereq: Must be enrolled in PhD Psychology with a concentration in Clinical Psychology or Requisites Not Met permission.

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 Unit.

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 Unit.

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 Units.

(Credit as arranged.)

PSCL 651. Thesis M.A.. 1 - 18 Units.

(Credit as arranged.)

PSCL 700. Internship. 0 Unit.

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 Units.

(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 majors and minor are offered by the Department of Computer and Data Sciences (<http://bulletin.case.edu/schoolofengineering/computatasci/>) in the Case School of Engineering.

Department of Dance

Mather Dance Center

<http://dance.case.edu/>

Phone: 216.368.1491; Fax: 216.368.6936

Karen Potter, Department Chair

karen.potter@case.edu

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 on stage 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.

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

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, select 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 and Sport Performance

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 and Sport Performance
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	
Additional requirements: (one time)		
DANC 385	Production Practicum	0
* 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. The School of Graduate Studies and the Department of Dance, in accordance with the Ohio Department of Education, requires a minimum grade point 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 & DANC 404	Fourth-Year Modern Dance Technique I and Fourth-Year Modern Dance Technique II	
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 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	
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:

18 hours of dance technique	18
12 hours of choreography	12
4 hours of Ensemble, DANC 485	4
MUDE 501 Special Reading (M.M. and M.A.)	1
MUDE 501 Special Reading (M.M. and M.A.) (MUDE 501 is to be taken twice for a total of 2 credit hours)	1
3 hours of contemporary dance history	3
3 hours of Production Resources, DANC 424	3
12 hours from Kinesiology, Pedagogy, Dance Wellness, research or elective	12
6 hours of creative thesis	6
Total Units	60

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. Prereq: 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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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.

Building upon the movement foundations explored in first-year modern dance courses, this course introduces the formalities of dance technique as a contemporary American art form with continued and progressive refinement and 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. Prereq: DANC 103 and DANC 104.

DANC 204. Second-Year Modern Dance Techniques II. 3 Units.

Continuation of DANC 203. Prereq: DANC 203.

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. Prereq: DANC 161.

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. Prereq: DANC 303 and DANC 304.

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 Units.

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 Units.

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. Prereq: DANC 303 and (DANC 345 or DANC 314).

DANC 345. Kinesiology for Dance and Sport Performance. 3 Units.

This course is an introduction to the general principles of the science of human movement focusing on musculoskeletal anatomy, physiology, and mechanics specifically pertaining to dance and sport performance. Prereq: Dance Major or PHED 332.

DANC 346. Topics in Dance Medicine, Science, and Wellness. 1 - 3 Units.

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, FSNA, FSSO, FSSY, or FSCS. Prereq or Coreq: FSTS 100.

DANC 360. Ballet Technique for Modern Dance Students I. 1 - 3 Units.

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. Prereq: DANC 261.

DANC 361. Ballet Technique for Modern Dance Students II. 1 - 3 Units.

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 Unit.

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, DANC 315, and DANC 324, who have also consistently excelled in their upper-level modern technique classes, and who 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 314 and DANC 355.

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 Units.

Independent research and project work in areas of dance and pedagogy.

DANC 403. Fourth-Year Modern Dance Technique I. 1 - 3 Units.

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 Units.

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 Units.

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 Units.

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 446. Topics in Dance Medicine, Science, and Wellness. 1 - 3 Units.

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 Units.

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 Units.

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 Units.

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 Units.

(See DANC 385.)

DANC 509. Introduction to Performance Theory. 1 - 3 Units.

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 Units.

(Credit as arranged.)

DANC 610. Professional Internship. 1 - 4 Units.

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 641. M.F.A. Thesis Production II. 3 Units.

Production implementation, post production evaluation/defense, and advisory assessment.

DANC 644. M.A. Project. 1 - 12 Units.

Research and development of a Master of Arts project in Dance.

Department of Earth, Environmental, and Planetary Sciences

112 A. W. Smith Building

<http://eeps.case.edu/>

Phone: 216.368.3690; Fax: 216.368.3691

Steven A. Hauck, II, Department Chair

steven.hauck@case.edu

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 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. Geological knowledge is fundamental to resource conservation, land use planning and other environmental concerns.

Department faculty have active research programs to investigate planet formation and evolution, and Earth and environmental history. 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. 167) is described elsewhere in this bulletin.

Department Faculty

Steven A. Hauck, II, PhD
(Washington University in St. Louis)
Professor and Chair
Geodynamics

Ralph P. Harvey, PhD
(University of Pittsburgh)
Professor
Planetary geology

Peter L. McCall, PhD, JD
(Yale University)
Professor; Director, Environmental Studies Program
Benthic ecology; paleoecology

Beverly Z. Saylor, PhD
(Massachusetts Institute of Technology)
Armington Professor
Sedimentary geology

James A. Van Orman, PhD
(Massachusetts Institute of Technology)
Professor
Geochemistry

Peter J. Whiting, PhD
(University of California, Berkeley)
Professor; Associate Dean, College of Arts and Sciences
Geomorphology; surface water hydrology; environmental geology

Adjunct Faculty

Mulugeta Alene Araya, PhD
(University of Turin/University of Genoa)
Adjunct Associate Professor
Structural geology

Jeffrey Balcerski, PhD
(Case Western Reserve University)
Adjunct Assistant Professor

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

Zhicheng Jing, PhD
(Yale University)
Adjunct Associate Professor

Anne Willem Omta, PhD
(Vrije Universiteit)
Adjunct Assistant Professor

Michael Ryan, PhD
(Univ of Calgary)
Adjunct Associate Professor

David Saja, PhD
(University of Pennsylvania)
Adjunct Assistant Professor; Cleveland Museum of Natural History
Mineralogy

Emeritus

Gerald Matisoff, PhD
(Johns Hopkins University)
Professor Emeritus
Sedimentary and environmental geochemistry

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
Paleontology and stratigraphy

Visiting Faculty

Sharmila Giri, PhD
(University of Miami)
Visiting Assistant Professor
Biogeochemistry

Nick Sutfin, PhD
(Colorado State University)
Visiting Assistant Professor
Fluvial geomorphology

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 (BA)

Required courses:

One of the following (EEPS 110 is preferred):		3
EEPS 101	The Earth and Planets	
EEPS 110	Physical Geology	
EEPS 115	Introduction to Oceanography	
EEPS 119	Geology Laboratory	1
EEPS 210	Earth History: Time, Tectonics, Climate, and Life	3
EEPS 301	Stratigraphy and Sedimentation	3
EEPS 315	Structural Geology and Geodynamics	3
EEPS 317	Introduction to Field Methods	3
EEPS 341	Mineralogy	4
EEPS 344	Igneous and Metamorphic Petrology	4
EEPS 360	Summer Field Camp	6
EEPS 390	Introduction to Geological Research	3
EEPS 391	Senior Project	2
EEPS 392	Professional Presentation	2
Nine hours of approved electives (at least two of these courses must be at the 200 level or higher)		9
Additional Required Courses		
CHEM 105	Principles of Chemistry I	3
CHEM 106	Principles of Chemistry II	3
CHEM 113	Principles of Chemistry Laboratory	2
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	
or MATH 124	Calculus II	
PHYS 115	Introductory Physics I	4
or PHYS 121	General Physics I - Mechanics	
or PHYS 123	Physics and Frontiers I - Mechanics	
PHYS 116	Introductory Physics II	4
or PHYS 122	General Physics II - Electricity and Magnetism	
or PHYS 124	Physics and Frontiers II - Electricity and Magnetism	
Total Units		70

EEPS 360 Summer Field Camp provides comprehensive field training in the summer between the junior and senior years (this course necessitates transfer credit, which must be approved by the department).

Geological Sciences Major (BS)

One of the following (EEPS 110 is preferred):		3
EEPS 101	The Earth and Planets	
EEPS 110	Physical Geology	
EEPS 115	Introduction to Oceanography	
EEPS 119	Geology Laboratory	1
EEPS 210	Earth History: Time, Tectonics, Climate, and Life	3
EEPS 301	Stratigraphy and Sedimentation	3
EEPS 315	Structural Geology and Geodynamics	3
EEPS 317	Introduction to Field Methods	3
EEPS 341	Mineralogy	4
EEPS 344	Igneous and Metamorphic Petrology	4
EEPS 360	Summer Field Camp	6
EEPS 390	Introduction to Geological Research	3
EEPS 391	Senior Project	2
EEPS 392	Professional Presentation	2
Twenty-one hours of approved electives (at least two of these courses must be at the 200 level or higher)		21
Additional Required Courses		
CHEM 105	Principles of Chemistry I	3
CHEM 106	Principles of Chemistry II	3
CHEM 113	Principles of Chemistry Laboratory	2
ENGR 131	Elementary Computer Programming	3
MATH 121	Calculus for Science and Engineering I	4
MATH 122	Calculus for Science and Engineering II	4
PHYS 121	General Physics I - Mechanics	4
PHYS 122	General Physics II - Electricity and Magnetism	4
One of ENGR 225/225b, CHEM 301, CHEM 335, or PHYS 221		3
Two semesters upper-level MATH or STAT		
Two additional semesters math/science/engr		

Environmental Geology Major

Required courses:

EEPS 110	Physical Geology	3
EEPS 119	Geology Laboratory	1
EEPS 210	Earth History: Time, Tectonics, Climate, and Life	3
EEPS 220	Environmental Geology	3
EEPS 303	Environmental Law	3
or EEPS 202	Global Environmental Problems	
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 approved 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.)

Additional Required Courses		
BIOL 114	Principles of Biology	3
CHEM 105	Principles of Chemistry I	3
CHEM 106	Principles of Chemistry II	3
CHEM 113	Principles of Chemistry Laboratory	2
ESTD 101	Introduction to Environmental Thinking	3
STAT 201	Basic Statistics for Social and Life Sciences	3
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	
PHYS 115	Introductory Physics I	4
or PHYS 121	General Physics I - Mechanics	
or PHYS 123	Physics and Frontiers I - Mechanics	
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/undergraduatestudies/gradprofessional/#accelerationtowardgraduatedegree>), 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 course work.

EEPS 119	Geology Laboratory	1
Up to three of the following courses:		9
EEPS 101	The Earth and Planets	
EEPS 110	Physical Geology	
EEPS 115	Introduction to Oceanography	
EEPS 117	Weather and Climate	
Upper-level EEPS courses to bring total departmental credits to at least 15		5
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, biostratigraphy 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 webpage, and the Office of Admission of the School of Graduate Studies.

Facilities

The department's research facilities include thin sectioning and mineral separation facilities; a variety of high-temperature furnaces, including gas-mixing furnaces; two piston cylinder devices, a 1000-ton Walker-style multi-anvil device, and a 1000-ton D-DIA multi-anvil device; laboratories for chemical analysis of water, including an ion chromatograph, colorimetric spectrometer, atomic absorption spectrophotometer, electrochemistry equipment, an environmental glove box, and carbon and sulfur analyzer; alpha and gamma spectroscopic facilities for analysis of environmental nuclides; equipment for studying animal-sediment relations, including a scanning gamma spectrometer; 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, and field and 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.

Courses

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 inner 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 201. Formation and Evolution of a Habitable Planet. 3 Units.

This course will provide an introduction to the formation and evolution of Earth with an emphasis on how our habitable planet has originated, developed, and sustained conditions suitable for life from a planetary science perspective. Topics include the Big Bang and formation of elements, formation of minerals and organic molecules, formation of the Solar System and planets, formation and differentiation of Earth's interior, plate tectonics and internal circulation, interactions between interior, atmosphere, and oceans, climate regulation, co-evolution of life and planet, and habitability of other planets in the Solar System and in the universe.

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. Earth History: Time, Tectonics, Climate, and Life. 3 Units.

The discovery and measurement of deep time, tectonic cycles, and geochemical cycles. The origin of life, major fossil groups and their evolution over time. Earth systems history: Major tectonic, ecologic, and climatic events in the last 4.5 billion years.

EEPS 215. Climate Crises in Earth History. 3 Units.

The past century has seen three great revolutions in our understanding of how the earth works: a revolution our understanding of geologic time, construction of the tectonic cycle that creates continents and oceans, and most recently, the ability to trace using isotopes global geochemical cycles. One of these, the carbon cycle, is intimately tied to climate change. We now know there have been a handful of climate crises in earth history—at least five—during which the planet experienced large scale changes in a short time, and we live now in the midst of another. We will examine the large-scale workings of the earth system, how the carbon cycle interacts with climate on time scales from millions of years to millennia to decades, and get an accessible overview of what we know about ongoing climate change and its current and future impacts. No prior knowledge of geology is assumed, and the course is suitable for non-majors, though we will encounter a few equations, some graphs, and some very simple computer models.

EEPS 220. Environmental Geology. 3 Units.

Geological attributes of environmental settings. Analysis of geologic conditions pertinent to engineering works. Site development, resource availability, urban planning, recognition and assessment of geologic hazards. Recommended preparation: EEPS 110 and EEPS 119.

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 260. Introduction to Climate Change: Physics, Forecasts, and Strategies. 3 Units.

This is a one-semester introduction to the physical processes that determine Earth's past, present, and future climate. The course focuses on quantitatively understanding the human impact on climate, including the historical development of steadily more sophisticated physical models, and ever more complete data. Particular emphasis will be placed on understanding climate change projections, as well as the ethical, political, economic, and communications challenges associated with various strategies going forward. The course is appropriate for all majors. Offered as EEPS 260 and PHYS 260.

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 and 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 Units.

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 Units.

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 352. Biogeochemistry. 3 Units.

This course is intended for upper-level undergraduate and graduate students and will focus on global environmental changes and the intersections between biology, geology, chemistry and environmental sciences. Throughout the semester students will explore the cycling of biologically important elements (carbon, nitrogen, phosphorus) in order to understand their role in shaping ecosystem processes and in the development of life on Earth. In the first half of the class, students will explore the biological/chemical processes that shape the past, present and future Earth System. In the second half of the course, students will investigate inter-related nature of these processes/reactions in regulating global biogeochemical cycles. Topics to be covered in this class include the origin of the Earth, elements and life; the Gaia Hypothesis; Geochemical tools to study Earth processes; biological and chemical processes occurring on Earth's surface; Global Climate/Environmental Change. Recommended Preparation: (CHEM 105 or CHEM 111) and (CHEM 106 or ENGR 145). Offered as EEPS 352 and EEPS 452.

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. Or Coreq: EEPS 390.

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 and 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 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 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 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 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 445. Planetary Materials. 1 - 3 Units.

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, 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 452. Biogeochemistry. 3 Units.

This course is intended for upper-level undergraduate and graduate students and will focus on global environmental changes and the intersections between biology, geology, chemistry and environmental sciences. Throughout the semester students will explore the cycling of biologically important elements (carbon, nitrogen, phosphorus) in order to understand their role in shaping ecosystem processes and in the development of life on Earth. In the first half of the class, students will explore the biological/chemical processes that shape the past, present and future Earth System. In the second half of the course, students will investigate inter-related nature of these processes/reactions in regulating global biogeochemical cycles. Topics to be covered in this class include the origin of the Earth, elements and life; the Gaia Hypothesis; Geochemical tools to study Earth processes; biological and chemical processes occurring on Earth's surface; Global Climate/Environmental Change. Recommended Preparation: (CHEM 105 or CHEM 111) and (CHEM 106 or ENGR 145). Offered as EEPS 352 and EEPS 452.

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 506. Seminar in Geophysics. 1 - 3 Units.

Selected topics in geophysics: advanced research issues, classical papers, current state of the field, advanced techniques. Course content will vary depending on interests of students and faculty.

EEPS 509. Seminar: Graduate Research. 1 Unit.

EEPS 511. Special Readings in Geology. 1 - 6 Units.

Detailed study of a selected topic in geology under the guidance of a faculty member.

EEPS 512. Special Readings in Geology. 1 - 6 Units.

Detailed study of a selected topic in geology under the guidance of a faculty member.

EEPS 601. Special Problems and Research. 1 - 18 Units.

(Credit as arranged.)

EEPS 651. Thesis M.S.. 1 - 18 Units.

(Credit as arranged.)

EEPS 701. Dissertation Ph.D.. 1 - 9 Units.

(Credit as arranged.) Prereq: Predoctoral research consent or advanced to Ph.D. candidacy milestone.

Department of Economics

The College of Arts and Sciences awards the Bachelor of Arts degree in economics. The required courses for the major and minor are offered by the Department of Economics in the Weatherhead School of Management.

Bachelor of Arts (BA) in Economics

(College of Arts and Sciences)

The BA in Economics is a 120-credit-hour, structured program in which students learn to analyze problems of resource allocation and decision making and to understand the influence of these factors on economies and societies.

Our highly regarded major attracts some of the best students on campus. Students have the opportunity to assist Weatherhead faculty in their research activities and to participate in independent research projects.

Bachelor of Arts (BA) in Economics concentration in Quantitative Methods

(College of Arts and Sciences)

This major option (120-hours) emphasizes mathematical and empirical methods in economics, including development of strong quantitative and programming skills. The Quantitative Methods concentration is especially recommended for students who are highly interested in research and advanced study in Economics.

General Degree Requirements

Students are required to complete the Arts and Sciences General Education Requirements (<http://bulletin.case.edu/undergraduatestudies/casdegree/#sagesrequirementsforcollegeofartsandsciencetext>).

Students who desire a *Secondary Major* in Economics should consult with a Weatherhead academic advisor.

Major Requirements: Economics

MATH 121	Calculus for Science and Engineering I	4
----------	--	---

or MATH 125	Math and Calculus Applications for Life, Managerial, and Social Sci I	
ECON 102	Principles of Microeconomics	3
ECON 103	Principles of Macroeconomics	3
ECON 307	Intermediate Macro Theory	3
ECON 308	Intermediate Micro Theory	3
or ECON 309	Intermediate Micro Theory: Calculus-Based	
OPRE 207	Statistics for Business and Management Science I	3
or STAT 243	Statistical Theory with Application I	
or STAT 312	Basic Statistics for Engineering and Science	
or STAT 312R	Basic Statistics for Engineering and Science Using R Programming	
ECON 326	Econometrics (Ideally, Econometrics should be taken by the junior year to enrich understanding of upper-level elective courses and to enable engagement in more sophisticated economic analysis.)	4
Elective courses (a minimum of five additional economics courses at the 200 or 300 level). ECON 398 Honors Research II does not count toward fulfilling this requirement.		15
Total Units		38

Major Requirements: Economics concentration in Quantitative Methods

The Quantitative Methods concentration includes the requirements above, AND the following additional or alternative requirements:

MATH 122	Calculus for Science and Engineering II	4
or MATH 126	Math and Calculus Applications for Life, Managerial, and Social Sci II	
ECON 309	Intermediate Micro Theory: Calculus-Based	3
Quantitative Methods - Any three of the following:		
ECON 216	Data Visualization in R	3
ECON 327	Advanced Econometrics	3
ECON 329	Game Theory: The Economics of Thinking Strategically	3
ECON 364	Economic Analysis of Business Strategies	3
ECON 380	Computational Economics	3

Electives 9 units-At least 3 must be in economics at 200-level or 300-level, and at least 3 must be from non-economics electives menu below:

Mathematics		
MATH 201	Introduction to Linear Algebra for Applications	3
or MATH 307	Linear Algebra	
MATH 223	Calculus for Science and Engineering III	3
MATH 224	Elementary Differential Equations	3
or MATH 228	Differential Equations	
MATH 304	Discrete Mathematics	3

MATH 321	Fundamentals of Analysis I	3
Advanced Empirical Methods in Business		
BAFI 362	Advanced Financial Analytics	3
OPRE 301	Operations Research and Supply Chain Management	3
Programming		
ENGR 131	Elementary Computer Programming	3
DESN 210	Introduction to Programming for Business Applications	3
Statistics		
STAT 244	Statistical Theory with Application II	3
STAT 325	Data Analysis and Linear Models	3
STAT 326	Multivariate Analysis and Data Mining	3
CSDS 442	Causal Learning from Data	3

**NOTE: ECON 395 and ECON 398 do not count towards electives (See information below on SAGES Senior Capstone).

SAGES Senior Capstone: Economics

The basic Economics major does not require a capstone as part of the major. However, students need to complete a capstone as part of the SAGES requirement. The Economics Department offers the following courses for a capstone.

ECON 398	Honors Research II	3
ECON 395	The Economy in the American Century	3
ECON 399	Individual Readings and Research (upon approval of Senior Capstone Coordinator)	3-6

SAGES Senior Capstone: Economics concentration in Quantitative Methods

Required - 3 units:

ECON 395	The Economy in the American Century	3
or ECON 398	Honors Research II	

For more information, contact Teresa Kabat (teresa.kabat@case.edu), department administrator, at 216.368.4110.

Department of English

106B Guilford House

<https://english.case.edu/>

Phone: 216.368.1508; Fax: 216.368.4367

Georgia J. Cowart, Interim Department Chair

georgia.cowart@case.edu

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, 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 emphasizes class discussion, individual conferences or

tutorials, and other opportunities for students and faculty to work closely together. Likewise, the curriculum is deliberately flexible to respond to student needs and interests and to encourage close cooperation with the faculty in planning a course of study.

A major in English prepares students 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 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 stepping stone 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

The main office is located in Guilford House, where regular public talks, department events, and classes are held. In Bellflower Hall, Writers House augments the English Department's mission through public lectures, workshops, community projects, and the Writing Resource Center. 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 for Digital Scholarship, 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.

For further details about our programs, see our website at <https://english.case.edu/>

Chair

Georgia J. Cowart, PhD
(Rutgers University)

Professor and Interim Chair

17th and 18th centuries; music, the arts, and politics

Department Faculty

Michael Clune, PhD

(Johns Hopkins University)

Samuel B. and Virginia C. Knight Professor of Humanities; Director of Graduate Studies

American literature; literature and philosophy; poetry

Gusztav Demeter, PhD
(Oklahoma State University)
Instructor; Coordinator of ESL Writing
Teaching English as a second language; applied linguistics; cognitive linguistics; discourse analysis

Kimberly Emmons, PhD
(University of Washington)
Oviatt Professor of English; Associate Professor; Director of Composition
Rhetoric; composition; gender and language; medical humanities

Christopher Flint, PhD
(University of Pennsylvania)
Professor
18th-century English literature; print culture

Mary Grimm, MA
(Cleveland State University)
Associate Professor; Director, Writers House
Creative writing (fiction); contemporary literature; graphic novels

Megan Swihart Jewell, PhD
(Duquesne University)
Senior Instructor
American literature; writing studies; poetics

Kurt Koenigsberger, PhD
(Vanderbilt University)
Associate Professor; Associate Dean, College of Arts and Sciences
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; the detective novel; translation studies; anarchist theory

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)
Senior Instructor; SAGES Instructional Coordinator
16th- and 17th-century British literature and theatre; landscape studies

John M. Orlock, MFA
(Pennsylvania State University)
Professor
British and American drama; narrative theory; playwriting; screenwriting

Martha Wilson Schaffer, JD, PhD
(Bowling Green State University)
Instructor; Associate Director of Composition
Rhetoric; composition; writing assessment

James Sheeler, MA
(University of Colorado)
Shirley Wormser Professor of Journalism and Media Writing; Director of Undergraduate Studies; Associate Chair
Journalism

Robert Spadoni, PhD
(University of Chicago)
Associate Professor
Film studies

Thrity Umrigar, PhD
(Kent State University)
Distinguished University Professor
Creative writing (fiction and memoir); journalism; African American literature

Maggie Vinter, PhD
(Johns Hopkins University)
Associate Professor
16th- and 17th-century British literature; drama

Athena Vrettos, PhD
(University of Pennsylvania)
Associate Professor
19th-century British literature; history of medicine and psychology; children's literature; gender studies

Lecturer

Gabrielle Parkin, PhD
(University of Delaware)
Interim Director of the Writing Resource Center
Late medieval English literature; material culture studies

Undergraduate Programs

Major

The major in English includes two tracks. The primary track consists of at least 30 semester hours in English above the 100 level (including 15 hours at the 300 level or above). The required courses are:

ENGL 300	English Literature to 1800	3
ENGL 302	English Literature since 1800	3
ENGL 308	American Literature	3
ENGL 380	Departmental Seminar	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 15

In addition, students submit an English major portfolio as described on our website.

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 or equivalent proficiency 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.

Departmental Honors

To qualify for honors, English majors must maintain a minimum GPA of 3.75 in English courses taken for honors and follow a track consisting of at least 36 hours above the 100 level, including: (a) the general requirements for the major (see above); (b) ENGL 387 Literary and Critical Theory; (c) at least 18 hours of approved electives in literary and cultural studies; and (d) one of the following:

- a course in a foreign language taught in the elected language at or above the 200 level,
- a course either in linguistics or in the history of the English language (the latter, however, cannot count for the general pre-1800 requirement and for honors track language substitution), or
- demonstrated fluency in a foreign language.

To be eligible for departmental honors, students must also complete their capstone requirement in a designated capstone course in English.

The department also offers other specialized options which follow.

Major with a 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 (no prerequisites)	3
----------	---	---

The remaining 6 credits can consist of a combination of the following:

ENGL 368	Topics in Film (no prerequisites; the course may be repeated for credit and may count for up to 6 credits of the concentration)	3-6
ENGL 368C	Topics in Film Capstone	3
ENGL 316	Screenwriting	3
ENGL 309	Immersion Journalism/Multimedia Storytelling	3
Or an approved elective course* (up to 3 credits of the concentration)		3

*Courses that have counted as electives toward the film concentration include: Latin American Cinema, Black Religion & Film, The Hollywood Musical, Topics in German Cinema, Film Music, Jewish Image in Popular Culture, French Cinema, James Bond & Popular Culture, Classics in Film, Bollywood & Social Justice, Video Production, and Folklore & Myth in Japanese Film.

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 36 hours in education and practicum requirements—and complete a planned sequence of English content course work 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 Licensure Program, and the relationships the university has built with area schools.

The subject area requirements for teacher licensure (33 credit hours) are as follows:

ENGL 204	Introduction to Journalism	3
ENGL 300	English Literature to 1800	3
ENGL 302	English Literature since 1800	3
ENGL 308	American Literature	3
ENGL 310	History of the English Language	3
ENGL 324	Shakespeare: Histories and Tragedies	3
or ENGL 325	Shakespeare: Comedies and Romances	
ENGL 368	Topics in Film	3
ENGL 380	Departmental Seminar	3
One of the following:		3
ENGL 301	Linguistic Analysis	
or ENGL 379	Topics in Language Studies	
or COSI 313	Language Development	
Two of the following:		6
ENGL 270	Introduction to Gender Studies	
ENGL 363H	African-American Literature	
ENGL 365E	The Immigrant Experience	
ENGL 365N	Topics in African-American Literature	
ENGL 365Q	Post-Colonial Literature	
Recommended electives:		
ENGL 203	Introduction to Creative Writing	
ENGL 213	Introduction to Fiction Writing	
ENGL 214	Introduction to Poetry Writing	
ENGL 303	Intermediate Writing Workshop: Fiction	
ENGL 304	Intermediate Writing Workshop: Poetry	
ENGL 392	Classroom Teaching	

Integrated Graduate Studies

The Department of English participates in the Integrated Graduate Studies Program (<http://bulletin.case.edu/undergraduatestudies/gradprofessional/#accelerationtowardgraduatedegree>), 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.

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. 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:

ENGL 367	Introduction to Film (no prerequisites)	3
The remaining 12 credits can consist of a combination of the following:		
ENGL 368	Topics in Film (no prerequisites; the course may be repeated for credit and may count for up to 12 credits of the minor)	3-12
ENGL 368C	Topics in Film Capstone (up to 3 credits)	3
ENGL 316	Screenwriting (up to 3 credits)	3
ENGL 309	Immersion Journalism/Multimedia Storytelling	3
An approved elective course** (up to 6 credits)		0-6

** Courses that have counted as electives toward the film minor include: Latin American Cinema, Black Religion & Film, The Hollywood Musical, Topics in German Cinema, Film Music, Jewish Image in Popular Culture, French Cinema, James Bond & Popular Culture, Classics in Film, Bollywood & Social Justice, Video Production, and Folklore & Myth in Japanese Film.

Minor in Creative Writing

The minor in creative writing requires 15 credit hours. Students will take courses in two 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. 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 Literature). Up to six credits may count toward either the English major or another minor (but not both).

In addition, students submit a creative writing portfolio.

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 concentration in Writing History and Theory or a practicum in Creative Writing.

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 and applied toward the MA, provided they were earned in graduate-level courses, with the approval of the department and the dean of graduate studies. (PhD transfer credit is normally not granted.) Such courses must have been taken within five years of matriculation at Case Western Reserve University and passed with grades of B or better.

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 the recommendation of the department. All graduate assistants are required to take university- and department-level teacher training courses in their first semester of work at the university.

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.

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 149. Emerging Writers Studio. 3 Units.

Introduction to the academic writing process in an intensive seminar and workshop environment. Course includes training and practice in prewriting, drafting, revising and editing.

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 ENGL 183 will count toward a degree, but the course may be repeated.

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.

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, RLG 270, SOCI 201, and WGST 201. Counts for CAS Global & Cultural Diversity Requirement. 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 and 21st centuries. May include authors from France, Italy, Spain, Germany, and Scandinavia. Offered as ENGL 291 and WLIT 291. Counts for CAS Global & Cultural Diversity Requirement.

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. Offered as ENGL 303 and ENGL 303C. 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. Offered as ENGL 303 and ENGL 303C. 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. Offered as ENGL 304 and ENGL 304C. 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. Offered as ENGL 304 and ENGL 304C. 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, THTR 312 and THTR 412.

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. Offered as 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. Offered as ENGL 307 and ENGL 307C. Counts as SAGES Senior Capstone. Prereq: ENGL 204 and ENGL 380 or prerequisites 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. Offered as 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. Offered as ENGL 309 and ENGL 309C. Counts as SAGES Senior Capstone. Prereq: ENGL 204 and ENGL 380 or prerequisites 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. Offered as 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. Offered as ENGL 312 and ENGL 312C. 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 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, THTR 314 and THTR 414. 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, THTR 316 and THTR 416. Prereq: THTR 316 or ENGL 305 or THTR 412.

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 323. Milton. 3 Units.

Poetry and selected prose, including the careful study of "Paradise Lost." Offered as ENGL 323 and ENGL 423. 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. A student may not receive credit for both ENGL 324 and ENGL 324C. Offered as ENGL 324, ENGL 324C, 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 324C. Shakespeare: Histories and Tragedies Capstone. 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. Students registering for 324C 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 324 and ENGL 324C. Offered as ENGL 324, ENGL 324C, ENGL 424, and THTR 334. Counts as SAGES Senior Capstone. Prereq: ENGL 380 and (ENGL 310 or 312 or 320 or 323 or 325 or 327 or 328 or 329).

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 325C, 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. Offered as ENGL 325, ENGL 325C, ENGL 425, and THTR 335. Counts as SAGES Senior Capstone. 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, 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: 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, ENGL 328C and ENGL 428. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, 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. Offered as ENGL 328, ENGL 328C and ENGL 428. 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 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, 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: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, 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, ENGL 330C 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. Offered as ENGL 330, ENGL 330C and ENGL 430. 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 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, ENGL 331C 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. Offered as ENGL 331, ENGL 331C and ENGL 431. 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. A student may not receive credit for both ENGL 341 and ENGL 341C. Offered as: ENGL 341, ENGL 341C, and ENGL 441. Prereq: ENGL 150 or letter grade in SAGES First Seminar.

ENGL 341C. Rhetoric of Science & Medicine Capstone. 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. Students registering for ENGL 341C 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 341 and ENGL 341C. Offered as ENGL 341, ENGL 341C and ENGL 441. 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 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. Counts for CAS Global & Cultural Diversity Requirement. 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. Counts for CAS Global & Cultural Diversity Requirement. 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. Counts for CAS Global & Cultural Diversity Requirement. 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. 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 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 AFST 363H, ENGL 363H, ETHS 363H, WLIT 363H, ENGL 463H, and WLIT 463H. Counts for CAS Global & Cultural Diversity Requirement. 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, ENGL 365EC, ENGL 465E, WLIT 365E and WLIT 465E. Counts for CAS Global & Cultural Diversity Requirement. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

ENGL 365EC. The Immigrant Experience Capstone. 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. Students registering for 365EC 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. Counts as SAGES Senior Capstone. Offered as ENGL 365E, ENGL 365EC, ENGL 465E, WLIT 365E and WLIT 465E. Counts as SAGES Senior Capstone. Counts for CAS Global & Cultural Diversity Requirement. 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 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 AFST 365N, ENGL 365N, ETHS 365N, WLIT 365N, ENGL 465N, and WLIT 465N. Counts for CAS Global & Cultural Diversity Requirement. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

ENGL 365NC. Topics in African American Literature Capstone. 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. Students registering for 365NC 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 365N, ETHS 365N, or WLIT 365N may receive credit for ENGL 365NC only if the themes/topics are different. Offered as ENGL 365N, ENGL 465N, ETHS 365N, WLIT 365N, and WLIT 465N. Counts as SAGES Senior Capstone. Counts for CAS Global & Cultural Diversity Requirement. 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 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, ENGL 365QC, ETHS 365Q, WLIT 365Q, ENGL 465Q, and WLIT 465Q. Counts for CAS Global & Cultural Diversity Requirement. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

ENGL 365QC. Post-Colonial Literature-Capstone. 3 Units.

Readings in national and regional literature of former Anglophone European colonies. Students may receive credit both for ENGL 365Q and for ENGL 365QC when course topics differ between the offerings. Offered as ENGL 365Q, ENGL 365QC, ETHS 365Q, WLIT 365Q, ENGL 465Q, and WLIT 465Q. Counts as SAGES Senior Capstone. Counts for CAS Global & Cultural Diversity Requirement. Prereq: ENGL 380 and a declared major in English.

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. Counts for CAS Global & Cultural Diversity Requirement. 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 art of film. Each week we'll take an element of film form (editing, cinematography, sound, and so on) and ask how filmmakers work with this element to produce effects. Most weeks we'll also screen a whole film and discuss it in light of the week's focus. Films screened will include masterworks of the silent era, foreign films, Hollywood studio-era classics, and more recent cinema. This course has no prerequisites and welcomes first year students. 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. 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 368 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. Comics and the Graphic Novel. 3 Units.

Selected topics in the study and analysis of comics and the graphic novel. Topics may include historical contexts of the genre, visual rhetoric, thematic developments, influence of literature, adaptations into film. A student may not receive credit for both ENGL 370 and ENGL 370C. Offered as ENGL 370, ENGL 370C, 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 370C. Comics and the Graphic Novel Capstone. 3 Units.

Selected topics in the study and analysis of comics and the graphic novel. Topics may include historical contexts of the genre, visual rhetoric, thematic developments, influence of literature, adaptations into film. Students registering for 370C 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 370 and ENGL 370C. Offered as ENGL 370, ENGL 370C, and ENGL 470. 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 371. 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. Counts for CAS Global & Cultural Diversity Requirement. 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. May cross over the prose/poetry boundary. 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 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," "epistolary." 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 Units.

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 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. Prereq or 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 404. Academic Reading and Critical Thinking. 3 Units.

In this class, graduate students develop strategies to process texts in their discipline more quickly, efficiently, and accurately, while at the same time reading more analytically and critically. Participants expand their vocabulary for both speaking and reading fluency.

ENGL 405. Academic Writing and Grammar. 3 Units.

The course is designed to develop the academic reading and writing skills necessary for graduate study in the United States. Graduate students will learn how to understand, summarize, respond to, and integrate graduate-level texts (from academic journals, high-quality journalism, professional websites, and textbooks). In addition, the course provides a comprehensive review of the essential grammar for research writing.

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 414. Advanced Academic Communication and Presentation. 3 Units.

In this course, graduate students develop the interactive speaking skills needed to participate effectively in seminar-style discussions and other formal group situations. In addition, the class focuses on the skills international graduate students need to organize and deliver presentations for academic and professional audiences. This class will reinforce and expand on oral communication strategies students learned in the previous semester.

ENGL 415. Academic Research and Writing. 3 Units.

The course focuses on the skills graduate students need to write research papers. This class will reinforce reading strategies students learned in the previous semester and graduate students will learn to organize ideas, synthesize material from written and other sources, and develop organizational and rhetorical skills appropriate to their discipline. Students will also learn to use reflection and self-assessment to become more independent and competent writers. This class will reinforce and expand on writing strategies students learned in the previous semester. Activities include small group work, analysis of academic texts, writing in a variety of academic genres, revising and editing, and tutorial sessions.

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. A student may not receive credit for both ENGL 324 and ENGL 324C. Offered as ENGL 324, ENGL 324C, 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 325C, 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, ENGL 328C 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, Tennyson, the Brownings, Arnold, Carlyle, Ruskin, Gosse, Swinburne, and Hopkins. Maximum 6 credits. Offered as ENGL 330, ENGL 330C 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, ENGL 331C 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. A student may not receive credit for both ENGL 341 and ENGL 341C. Offered as: ENGL 341, ENGL 341C, 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. Counts for CAS Global & Cultural Diversity Requirement. 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. Counts for CAS Global & Cultural Diversity Requirement.

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 AFST 363H, ENGL 363H, ETHS 363H, WLIT 363H, ENGL 463H, and WLIT 463H. Counts for CAS Global & Cultural Diversity Requirement. 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, ENGL 365EC, ENGL 465E, WLIT 365E and WLIT 465E. Counts for CAS Global & Cultural Diversity Requirement. 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 AFST 365N, ENGL 365N, ETHS 365N, WLIT 365N, ENGL 465N, and WLIT 465N. Counts for CAS Global & Cultural Diversity Requirement. 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, ENGL 365QC, ETHS 365Q, WLIT 365Q, ENGL 465Q, and WLIT 465Q. Counts for CAS Global & Cultural Diversity Requirement. 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. Counts for CAS Global & Cultural Diversity Requirement. Prereq: Graduate standing.

ENGL 467. Introduction to Film. 3 Units.

An introduction to the art of film. Each week we'll take an element of film form (editing, cinematography, sound, and so on) and ask how filmmakers work with this element to produce effects. Most weeks we'll also screen a whole film and discuss it in light of the week's focus. Films screened will include masterworks of the silent era, foreign films, Hollywood studio-era classics, and more recent cinema. This course has no prerequisites and welcomes first year students. 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. 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 470. Comics and the Graphic Novel. 3 Units.

Selected topics in the study and analysis of comics and the graphic novel. Topics may include historical contexts of the genre, visual rhetoric, thematic developments, influence of literature, adaptations into film. A student may not receive credit for both ENGL 370 and ENGL 370C. Offered as ENGL 370, ENGL 370C, and ENGL 470.

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. Counts for CAS Global & Cultural Diversity Requirement. 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 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," "epistolary." 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 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 504. Creative Writing Theory and Practice. 3 Units.

This course is designed to prepare MA and PhD candidates in English to teach ENGL 203 (Introduction to Creative Writing). It is a required course for any graduate student seeking a concentration in creative writing. The course will operate as a hybrid seminar/workshop. Students will examine and discuss traditional creative writing and teaching practices while producing their own works of creative writing for exchange and critique. Recommended Preparation: a creative writing workshop at the undergraduate or graduate level or permission of the instructor. While the overriding objective of this course is to prepare graduate students to teach ENGL 203, the multiple objectives coordinated toward that outcome are as follows: – to exercise and refine creative writing practices of participants – to share resources for professional development in creative writing (e.g. publication opportunities, conferences, etc.) – to provide critical/historical view of creative writing's relationship with the academy – to examine and debate received creative writing pedagogies – to position creative writing pedagogy in resistance to hegemony and monoculture – to develop genre-specific, and genre-adaptable creative writing pedagogies – to consider intersections of digital media and creative writing

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 510. Research Methods. 3 Units.

This course focuses on methods and resources for research in English, including substantial treatments of narrative, poetics, 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 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 590. 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 Units.

Guided reading for academic and professional development. Prereq: Graduate status.

ENGL 651. Thesis M.A.. 1 - 18 Units.

(Credit as arranged.) Prereq: Graduate standing.

ENGL 701. Dissertation Ph.D.. 1 - 9 Units.

(Credit as arranged.) Prereq: Predoctoral research consent or advanced to Ph.D. candidacy milestone.

Environmental Studies Program

211 A. W. Smith Building
www.case.edu/artsci/estd/ (<http://www.case.edu/artsci/estd/>)
 Phone: 216.368.3676; Fax: 216.368.3691
 Peter McCall, Program Director
peter.mccall@case.edu

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 as well as 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.

Program Faculty

Peter L. McCall, JD, PhD
*Professor, Department of Earth, Environmental, and Planetary Sciences;
 Director, Environmental Studies Program*

Timothy Beal, PhD
Florence Harkness Professor of Religion; Department of Religious Studies

Jeremy Bendik-Keymer, PhD
Elmer G. Beamer-Hubert H. Schneider Professor in Ethics; Associate Professor, Department of Philosophy

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, Department of History

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 or secondary 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

ESTD 101	Introduction to Environmental Thinking	3
ESTD 398	Seminar in Environmental Studies	3
or ESTD 399	Departmental Seminar in Environmental Studies	
One course from each of the following disciplinary groups:		
Humanities		3
RLGN 206	Religion and Ecology	
ESTD 318	People and Planet	
HSTY 378	North American Environmental History	
Social Science		3
ESTD 303	Environmental Law	
ECON 368	Environmental Economics	
PHIL 384	Ethics and Public Policy	
ESTD 388	Politics, Policy, and the Global Environment	
Science and Engineering		3
ESTD 202	Global Environmental Problems	
ECSE 342	Introduction to Global Issues	
BIOL 351	Principles of Ecology	
Fifteen additional hours chosen in consultation with the departmental advisor. An approved Washington Study internship or summer field course may be used to satisfy part or all of the elective requirement. Courses taken to satisfy General Education Requirements of a school might also qualify as ESTD electives. All programs of study must be approved by the director.		15
Total Units		30

If a required course is not offered, substitution of a course to fulfill the distribution requirement is possible only with permission of the program director.

Minor

The minor in Environmental Studies (15 credit hours) consists of:

Required course:

ESTD 101	Introduction to Environmental Thinking	3
One course each from two of the following disciplinary groups:		
Humanities		
RLGN 206	Religion and Ecology	
ESTD 318	People and Planet	
HSTY 378	North American Environmental History	
Social Science		

ESTD 303	Environmental Law	
ECON 368	Environmental Economics	
PHIL 384	Ethics and Public Policy	
ESTD 388	Politics, Policy, and the Global Environment	
Science and Engineering		
ESTD 202	Global Environmental Problems	
ECSE 342	Introduction to Global Issues	
BIOL 351	Principles of Ecology	
Courses from the disciplinary groups may also be selected as electives.		
Six additional hours chosen in consultation with the departmental advisor. Courses taken to satisfy General Education Requirements of a school might also qualify as ESTD electives.		6
Total Units		15

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.

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 318. People and Planet. 3 Units.

In this course, we study the way in which the environment is a matter of politics. Our approach is philosophical, examining the concept of politics in light of how societies shape their environment on Earth. This elucidation's aim is practical. We want to know not only what environmental politics is, but what we should do about it. Students from any major are welcome, without prerequisite. Offered as PHIL 318, POSC 318 and ESTD 318.

ESTD 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, ARTH 482 and ESTD 382. Counts for CAS Global & Cultural Diversity Requirement.

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 ESTD 388, POSC 388 and 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 ESTD 398 in the same year. Counts as SAGES Departmental Seminar.

Ethnic Studies Program

204 Guilford House
 Phone: 216.368.4885; Fax: 216.368.2216
 Gilbert Doho, Program Director
 gilbert.doho@case.edu

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:

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.

Program Faculty

Gilbert Doho, PhD
(University of Paris—Sorbonne Nouvelle)
Associate Professor, Department of Modern Languages and Literatures;
Director, Ethnic Studies Program
African theater and film, people theater

Katia Almeida, PhD
Senior Instructor, Department of Anthropology
Latin America and Brazil, globalization and electronic technologies in higher education

Damaris Punaes-Alpizar, PhD
(University of Iowa)
Associate Professor, Department of Modern Languages and Literatures
Latin American studies

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

Marilyn Sanders Mobley, PhD
(Case Western Reserve University)
Professor, Department of English
African-American literature

Jacqueline Nanfito, PhD
(UCLA)
Associate Professor, Department of Modern Languages and Literatures
Latin American studies / Women's studies

Cristián Gómez Olivares, PhD
(University of Iowa)
Associate Professor, Department of Modern Languages and Literatures
Latin American literature and theory

Deepak Sarma, PhD
(University of Chicago)
Professor, Department of Religious Studies
Hinduism; Indian philosophy; philosophy of religion; method and theory

Jonathan Tan, PhD
(Catholic University of America)
Archbishop Paul J. Hallinan Professor in Catholic Studies; Associate Professor, Department of Religious Studies
Asian/Asian American Studies and Chinese/Chinese American Studies

Cheryl Toman, PhD
(University of Illinois at Urbana-Champaign)
Professor, Department of Modern Languages and Literatures
Women in Sub-Saharan Africa and the Middle East

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-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:	6
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	9
Total Units	15

Concentrations

African Studies Concentration

Any three of the following courses:	9
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
FRCH/WLIT 295	The Francophone World
FRCH/WLIT 308	Immigration and the Paris Experience
POSC 366	Government and Politics of Africa
Total Units	9

African-American Studies Concentration

Any three of the following courses:	9
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:	9
COSI 260	Multicultural Aspects of Human Communication
ECON 375	Economics of Developing Countries
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

Global Ethnic Studies Concentration

Any three of the following courses:	9
ANTH 314	Cultures of the United States
ANTH 388	Globalization, Development and Underdevelopment: Anthropological Perspective
ANTH 530	Seminar in Medical Anthropology: Topics
COSI 260	Multicultural Aspects of Human Communication
ECON 375	Economics of Developing Countries
ENGL 270	Introduction to Gender Studies
ENGL/WLIT 365Q	Post-Colonial Literature
FRCH/WLIT 295	The Francophone World
FRCH/ETHS/ WLIT/WGST 335	Women in Developing Countries
POSC 374	Politics of Development in the Global South
WGST/ETHS 301	Women, Creativity and the Arts
Total Units	9

Courses

ETHS 153. Introducing Chinese Religions. 3 Units.

This "topics" course offers an introduction to the academic study of Chinese religions. Whether approached through a particular theme or as a general historical introduction, each section of this course provides students with a general introduction to the academic study of religion and a basic religious literacy in the nuances and complexities in Chinese religions within various historical and socio-cultural contexts. Section topics might include, but are not limited to: Confucianism, Daoism, Chinese Buddhism, Gender and Sexuality in Chinese Religions. Students may repeat the course for credit once (two times total for 6 credits), provided that the two sections are different. Offered as RLGN 153, ETHS 153 and CHIN 253. Counts for CAS Global & Cultural Diversity Requirement.

ETHS 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. Counts for CAS Global & Cultural Diversity Requirement.

ETHS 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 and HSTY 220. Counts for CAS Global & Cultural Diversity Requirement.

ETHS 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 AFST 222, ETHS 222 and RLG 222.

ETHS 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 RLG 224. Counts as SAGES Departmental Seminar. Counts for CAS Global & Cultural Diversity Requirement.

ETHS 228. Asian Americans: Histories, Cultures, Religions. 3 Units.

This course introduces students to Asian American Studies as an interdisciplinary academic discipline. It critically examines the global and transnational dimensions of U.S. history, the constructions of "modernity" in the U.S., and the shaping of U.S. culture and religion, race and racialization, identity constructions and contestations, law and law-making, colonialism and empire building, labor and migration, politics and public policy making, and social movements through a critical study of Asian Americans and their diverse histories, cultures, religions, identity negotiations and contestations, social movements, and political activism. Offered as ETHS 228, HSTY 228 and RLG 228. Counts for CAS Global & Cultural Diversity Requirement.

ETHS 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 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 RLG 232 and ETHS 232. Counts for CAS Global & Cultural Diversity Requirement.

ETHS 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 and HSTY 234. Counts as SAGES Departmental Seminar. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

ETHS 243. Bollywood and Social Justice: Contemporary Bollywood Movies with a Social Message. 3 Units.

India, where over-the-top, melodramatic films dominate, produces more than 1,000 films a year. With lavish action sequences punctuated by periodic songs in picturesque locales, these films, popularly referred to as Bollywood, traditionally have been known for depicting imaginary worlds, very far from reality. Among these are movies that are deeply immersed in issues of religion, religious conflict, caste, and social injustice. These issues range from ones concerning purity and the class system and Hindu-Muslim conflict, to women's rights and human trafficking. This class will be looking at a number of Bollywood films with focal points of matters pertaining to social justice. Students will learn about the foundations of these inequalities and intolerances so that they can more completely understand the themes addressed in the movies. Offered as ETHS 243 and RLGN 243.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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 AFST 135, ETHS 253A and HSTY 135. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

ETHS 253C. Religion and Philosophy in China. 3 Units.

This course critically examines the three principal religious and philosophical traditions of China: the Confucian, Daoist, and Chinese Buddhist traditions. Through a combination of assigned print and online readings, video clips and documentaries, class discussions, and written assignments, students explore the origins and historical developments, principal thinkers, central religious and doctrinal themes, ethics, spirituality, popular devotions, social movements, and contemporary developments of these three major religious and philosophical traditions of China. Students will consider the wider social, cultural, ethical, economic, and political dimensions of Chinese religions and philosophies generally, and themes of community and society, identity constructions, personal experiences, movements, as well as their socio-cultural reproductions in contemporary China, and where appropriate, the Chinese Diaspora in North America. Offered as CHIN 253C, ETHS 253C, PHIL 253 and RLGN 253.

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. Counts for CAS Global & Cultural Diversity Requirement.

ETHS 258. History of Southern Africa. 3 Units.

A survey of southern Africa from about 1600. Topics include the social structure of pre-colonial African societies, the beginnings of European settlement, the rise of Shaka, the discovery of minerals and the development of industry, Zimbabwe's guerrilla war and independence, and the rise and apparent demise of apartheid. Offered as AFST 258, ETHS 258 and HSTY 258. Counts for CAS Global & Cultural Diversity Requirement.

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 AFST 260, ETHS 260 and HSTY 260. Counts for CAS Global & Cultural Diversity Requirement.

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 AFST 261, ETHS 261 and HSTY 261. Counts for CAS Global & Cultural Diversity Requirement.

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 AFST 262, ETHS 262 and HSTY 262. Counts for CAS Global & Cultural Diversity Requirement.

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 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 AFST 265, ETHS 265 and RLGN 265. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

ETHS 301. Women, Creativity and the Arts. 3 Units.

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 art 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. Counts for CAS Global & Cultural Diversity Requirement.

ETHS 302. The Lemonade Class: Religion, Race, Sex and Black Music. 3 Units.

Charles Long suggests that black musical forms are creative responses to the particular circumstances of black peoples' presence in the U.S and black notions of the sacred. In April of 2016, Beyoncé released her visual album *Lemonade* two days after the death of Prince. This course is organized around the album's title cuts and links these two artists together in an examination of religion and musical performance as creative response to the racial and gendered conditions of black life. The course investigates how both artists have used music as a platform to explore issues of race, gender, commerce, sexuality, power and divinity. The course also looks at examples from the works of earlier artists who address similar themes such as Ma Rainey, Bessie Smith, Muddy Waters, Billie Holiday, Nina Simone, Little Richard, James Brown, Marvin Gaye, and Aretha Franklin. Offered as AFST 302, ETHS 302, MUHI 316, RLGN 302, RLGN 402, and WGST 302. Counts for CAS Global & Cultural Diversity Requirement.

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 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 AFST 304, RLGN 304, RLGN 404, WGST 304, and ETHS 304. Counts for CAS Global & Cultural Diversity Requirement.

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 in Matanzas and Havana, Cuba. The course combines the unique advantages of a total immersion environment in the Cuban culture with a classroom curriculum that includes the study of relevant cultural, literary and historical issues. Students complete three hours of classroom instruction and an hour and a half of workshop four days per week. Also, 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 into 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 three upper-level credits in Spanish or Ethnic Studies. The course is interdisciplinary in its 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. Also, 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. Counts for CAS Global & Cultural Diversity Requirement. Prereq: SPAN 202.

ETHS 307. Body, Health and Medicine in Chinese Religions: Historical and Contemporary Perspectives. 3 Units.

This course critically evaluates the history and development of traditional Chinese approaches to health and medicine in the context of Chinese religious, philosophical, and socio-cultural history. It examines the constructions of the body in Chinese religious and philosophical thought across different historical periods and evaluates their significance and implications for understanding Chinese approaches to health and medicine. It discusses the conceptions of "health" and "good health" in ancient China, the distinction between "healing" and "curing," the development of the complementary yin-yang and five phases (wuxing) theories, understandings of nature (xing) and body (ti), the concept of qi as life force, and various microcosm-macrocosm analogies that emerged from Chinese religious and philosophical traditions. It explores how these religious and philosophical frameworks, beginning with the Daoist classic, *Basic Questions in the Inner Classic of the Yellow Emperor* (Huangdi Neijing Suwen) have evolved to undergird the development of diet, acupuncture, moxibustion, meditation, and various alchemical practices within Chinese holistic conceptions of health and practices of Traditional Chinese Medicine. Offered as RLGN 307, RLGN 407, CHIN 307, HSTY 308, and ETHS 307. Counts as SAGES Departmental Seminar. Counts for CAS Global & Cultural Diversity Requirement.

ETHS 308. Immigration and the Paris Experience. 3 Units.

Three-week immersion learning experience living and studying in Paris. The focus of the course is the culture, literature, and the arts of the African, Arab, and Asian communities of Paris. At least half of the course looks at issues surrounding immigration that affect women in particular. 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, ETHS 308, and WGST 308 students have the option of completing coursework in English. Graduate students have additional course requirements. Offered as FRCH 308, WLIT 308, ETHS 308, WGST 308, FRCH 408, and WLIT 408. Counts for CAS Global & Cultural Diversity Requirement.

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, Santería, 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 representatives 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 AFST 311, ETHS 311, RLGN 311, and RLGN 411. Counts for CAS Global & Cultural Diversity Requirement. 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 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.

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, ETHS 316, PHIL 316, and ETHS 416. Counts for CAS Global & Cultural Diversity Requirement. Prereq: PHIL 101.

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 AFST 318, ETHS 318, HSTY 318, and WGST 318.

ETHS 326. Christianity in China. 3 Units.

This course critically evaluates Christianity's long history in China, beginning with the "Luminous Religion" (Jingjiao) that was propagated by Assyrian Christian missionaries in Tang China (7th century CE), the missionary endeavors of Catholic and Protestant foreign missionaries and mission societies, the rise of indigenous Chinese Christianities that sought independence from foreign missionaries, the impact of communist rule and the Cultural Revolution, and current developments involving both the official government-approved churches (i.e., the Three Self Patriotic Movement and the Chinese Patriotic Catholic Association) on the one hand, and the house church movement (jiating jiaohui) on the other hand. Students will critically discuss and analyze the historical dimensions of Christianity's presence in China and engagement with various social, cultural, political, philosophical, and religious aspects of Chinese society, past and present, and consider the implications of emergent forms of contemporary indigenous Chinese Christian movements for the future of Chinese Christianity. Offered as RLG 316, RLG 416, HSTY 322, CHIN 316 and ETHS 326. Counts for CAS Global & Cultural Diversity Requirement.

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, and ETHS 333. Counts for CAS Global & Cultural Diversity Requirement.

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 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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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, RLG 338 and WGST 339. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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, and WGST 342. Counts for CAS Global & Cultural Diversity Requirement.

ETHS 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 and ETHS 343. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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, 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, patriarchy, 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. Counts for CAS Global & Cultural Diversity Requirement.

ETHS 353. Hindu and Jain Bioethics: Special Focus on Women's and Gender Studies. 3 Units.

This course will provide both an introduction to basic Hinduism and Jainism and an introduction to Hindu and Jain bioethics. We will focus primarily on bioethical issues that pertain to women and that are gender related. These issues include abortion, menstruation, surrogacy, intersex, and other topics of controversy. Offered as ETHS 353, RLGN 353, RLGN 453, and WGST 355. Counts for CAS Global & Cultural Diversity Requirement.

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 and ETHS 356. Counts for CAS Global & Cultural Diversity Requirement.

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 and ETHS 358. Counts for CAS Global & Cultural Diversity Requirement.

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 AFST 363H, ENGL 363H, ETHS 363H, WLIT 363H, ENGL 463H, and WLIT 463H. Counts for CAS Global & Cultural Diversity Requirement. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, 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. Counts for CAS Global & Cultural Diversity Requirement.

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 AFST 365N, ENGL 365N, ETHS 365N, WLIT 365N, ENGL 465N, and WLIT 465N. Counts for CAS Global & Cultural Diversity Requirement. 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, ENGL 365QC, ETHS 365Q, WLIT 365Q, ENGL 465Q, and WLIT 465Q. Counts for CAS Global & Cultural Diversity Requirement. 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. Social Justice Issues in Latin America. 3 Units.

This course explores ethnicity, gender, and religion in Latin American politics and society, and then tackles revolution, democracy, and populism. Throughout, the region's history, geography, and culture are taken into account—for example, the European and indigenous legacies in Mexico and Perú, Bolivia, Chile, and Ecuador; the Asian presence in Perú 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 Fernández de Kirchner, Costa Rica's Laura Chinchilla, and Brazil's Dilma Rousseff. Liberation Theology and the current Pope's worries about the declining number of Catholics in the region are also addressed. Today's multiparty democracy in Mexico, Hugo Chávez's legacy in Venezuela, and Cuba's international humanitarian aid and ideological aims would not be possible without revolution(s) and populism. They are inevitably intertwined with ethnicity, gender, and religion. This course aims to encourage a better understanding of Latin America and its relation to the rest of the world. Offered as ETHS 369, POSC 369 and POSC 469. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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 AFST 399, 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 AFST 393, HSTY 393, HSTY 493, and ETHS 393. Counts for CAS Global & Cultural Diversity Requirement.

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, ETHS 316, PHIL 316, and ETHS 416. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

Evolutionary Biology Program

217 Rockefeller, Institute for the Science of Origins

Phone: 216.368.4257

Patricia Princehouse, Program Director

patricia.princehouse@case.edu

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.

Program Faculty

Patricia Princehouse, PhD

Senior Research Associate, Department of History; Director, Evolutionary Biology Program

Radhika Atit, PhD

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

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:

BIOL 214	Genes, Evolution and Ecology	3
EEPS 210	Earth History: Time, Tectonics, Climate, and Life	3

PHIL/ANTH/BIOL/EEPS/HSTY 225	Evolution	3
------------------------------	-----------	---

Additional required courses (one from each area)

Ecology		3
---------	--	---

BIOL 216	Development and Physiology	
BIOL 336	Aquatic Biology	
BIOL 351	Principles of Ecology	

Philosophy/History of Science		3
HSTY 201	Science in Western Thought I	

HSTY 202	Science in Western Thought II	
HSTY 402	Introduction to Historiography of Science	
PHIL 203	Revolutions in Science	
PHIL 303	Topics in Philosophy of Science	
Approved electives		12
ANTH 103	Introduction to Human Evolution	
ANTH 302	Darwinian Medicine	
ANTH 370	Field Seminar in Paleoanthropology	
ANTH 375	Human Evolution: The Fossil Evidence	
ANTH 377	Human Osteology	
ANTH 378	Reproductive Health: An Evolutionary Perspective	
BIOL 214L	Genes, Evolution and Ecology Lab	
BIOL 216L	Development and Physiology Lab	
BIOL 223	Vertebrate Biology	
BIOL 305	Herpetology	
BIOL 318	Introductory Entomology	
BIOL 326	Genetics	
BIOL 328	Plant Genomics and Proteomics	
BIOL 339	Aquatic Biology Laboratory	
BIOL 343	Microbiology	
BIOL 345	Mammal Diversity and Evolution	
BIOL 351L	Principles of Ecology Laboratory	
BIOL 358	Animal Behavior	
BIOL 362	Principles of Developmental Biology	
BIOL 364	Research Methods in Evolutionary Biology	
BIOL 365	Evo-Devo: Evolution of Body Plans and Pathologies	
EEPS 301	Stratigraphy and Sedimentation	
EEPS/BIOL 307	Evolutionary Biology and Paleobiology of Invertebrates	
PSCL 350	Behavior Genetics	
STAT 201	Basic Statistics for Social and Life Sciences	
STAT 313	Statistics for Experimenters	
ANTH/EEPS/PHIL 367	Topics in Evolutionary Biology	
ANTH/BIOL/EEPS/PHIL 396	Undergraduate Research in Evolutionary Biology	

Total Units 27

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/ANTH/EEPS/HSTY/PHIL 225	Evolution	3
BIOL 214	Genes, Evolution and Ecology	3
EEPS 210	Earth History: Time, Tectonics, Climate, and Life	3

Two approved electives selected in consultation with advisor

Total Units

6 The major in French and Francophone Studies requires a minimum of 33 credit hours in the following areas:

15

French and Francophone Studies Program

203 Clark Hall

Phone: 216.368.2633; Fax: 216.368.6078

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.

Program Advisory Committee

Gilbert Doho, PhD

Associate Professor, Department of Modern Languages and Literatures

Laura E. Hengehold, PhD

Professor, Department of Philosophy

Cheryl Toman, PhD

Ruth Mulhauser Professor and Chair, Department of Modern Languages and Literatures

Affiliated faculty

Gillian Weiss, PhD

Associate Professor, Department of History

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).

1. Foundations in Language (8 hours)

For students entering at the 200-level of French language:

FRCH 201	Intermediate French I	4
FRCH 202	Intermediate French II	4

Students entering at the 300-level of language study complete 21 credits in courses from the 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 World	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 & HSTY 202	Science in Western Thought I and Science in Western Thought II	6
HSTY 215	Europe in the 20th Century	3
HSTY 234	France and Islam	3
HSTY 250	Issues and Methods in History	3
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	Philosophy Honors Thesis	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 392	Independent Study	1 - 3

Theater

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/ENGL 290	Masterpieces of Continental Fiction	3
WLIT 300	The City in Literature	3

WLIT 390	Topics in World Literature	3
WLIT 399	Independent Study	1 - 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 Immigration and the Paris Experience / WLIT 308 Immigration and the Paris Experience). FRCH 208 The Montreal Experience is a spring break service-learning excursion to Montreal. There are also opportunities for study in Cameroon.

Minor

The minor requires 15-17 credits. Students entering at the 200 level of language competence take:

FRCH 201	Intermediate French I	4
FRCH 202	Intermediate French II	4
Three courses in FRCH from the approved list		9
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.

Gerontological Studies Program

226 Mather Memorial
www.case.edu/artsci/soci/gerontological.html (<http://www.case.edu/artsci/soci/gerontological.html>)

Phone: 216.368.2703; Fax: 216.368.2676

Dale Dannefer, Program Co-Director

dale.dannefer@case.edu

Gary Deimling, Program Co-Director

gary.deimling@case.edu

The Gerontological Studies Program is a multidisciplinary program designed to integrate research and theory about human aging and human development over the life course.

Rapidly occurring social change is compelling social scientists, policymakers, human service professionals, and others to focus on aging as both an individual and global force. Beyond the rapid graying of the world's population, other frontiers of change include knowledge developments in the biosocial domain (epigenetic and other types of gene-environment interaction), powerful trends in the political and economic spheres (e.g., cumulative dis/advantage, pension policy, generational equity), and cultural changes (e.g., the development of

forward-thinking institutional arrangements and the growth of the anti-aging industry).

Courses are drawn from three departments: Anthropology, Psychological Sciences, and Sociology. Students may choose from a variety of courses according to their own interests. Some approved elective courses 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 second major or minor for students with a wide variety of career goals. Persons with baccalaureate degrees in this field are eligible for entry-level positions in organizations that provide health and social services to older people and that formulate policy related to aging and older adults. For those whose careers will require professional or graduate training, this program can be valuable preparation. This includes pre-health students, especially those with an interest in geriatrics or family practice. It is also excellent preparation for those who are working toward careers in social work, family law, and financial planning. Students planning to pursue these professional degrees will find that an increasing number of their clients or patients will be older adults and problems with which they must deal are related to aging.

Gerontological Studies faculty members 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 institutionalized older adults and elderly residents of urban communities.

Program Faculty

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)

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, PhD
(Purdue University)

Professor, Department of Sociology
Health disparities; sociology of disability; sociology of the life course; race/ethnicity

Undergraduate Programs

Major

The interdisciplinary program in Gerontological Studies offers a major as part of the Bachelor of Arts degree. Gerontological Studies may be selected only as a second major, since the primary major must be based in a traditional academic department. The major consists of a minimum of 30 credits; 9 are in required core courses and 21 are in approved elective courses.

Required core courses:	9
COSI 345	Communication and Aging
PSCL 369	Adult Development and Aging
SOCI 361	The Life Course
or SOCI 369/469	Aging in American Society

Additional courses that will bring the major total to 30 can include any of the courses listed below plus those that are approved by one of the co-directors of Gerontological Studies.

ANTH 215	Health, Culture, and Disease: An Introduction to Medical Anthropology	21
SOCI 311	Health, Illness, and Social Behavior	
SOCI 313	Sociology of Stress and Coping	
SOCI 319	Sociology of Institutional Care	
SOCI 365	Health Care Delivery	

Total Units 30

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 four 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 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 3-credit courses in gerontology within the student's discipline, one of which can be an independent study.
2. One 3-credit course in gerontology or independent study outside the student's discipline.
3. A 3-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.

Course

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.

Department of History

106 Mather House
<https://history.case.edu/>
Phone: 216.368.2380; Fax: 216.368.4681
Kenneth Ledford, Department Chair
kenneth.ledford@case.edu

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, medicine, 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.

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

John Broich, PhD
(Stanford University)
Associate Professor
British history; British Empire; environmental history; history of public health

Daniel Cohen, PhD
(Brandeis University)
Associate Professor, Director of Graduate Studies
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)
Associate Professor
Mexican American history; immigration; labor

Jay Howard Geller, PhD
(Yale University)
Samuel Rosenthal Professor of Judaic Studies
Jewish history, modern European history, modern German history

John Grabowski, PhD
(Case Western Reserve University)
Krieger-Mueller Joint Professor of History; Associate Professor
United States history; immigration and ethnicity; local history

Aviva Rothman, PhD
(Princeton University)
Assistant Professor
History of science; intellectual history, early modern Europe

Jonathan Sadowsky, PhD
(Johns Hopkins University)
Theodore J. Castele Professor
Medical history; African history; comparative history

Renée M. Sentilles, PhD
(College of William and Mary)
Henry Eldridge Bourne Professor of History
American women's history; U.S. cultural history; American studies; children's studies

Peter Shulman, PhD
(Massachusetts Institute of Technology)
Associate Professor; Director of Undergraduate Studies
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

Ben Vinson III, PhD
(Columbia University)
Hiram C. Haydn Professor of History; Provost and Executive Vice President
Latin American history

Noël M. Voltz, PhD
(The Ohio State University)
Assistant Professor
African American history; African diasporic history; women of color in slavery and freedom in the United States and the Atlantic world

Gillian L. Weiss, PhD
(Stanford University)
Associate Professor
Early modern France; comparative slavery; the Mediterranean

Emeritus Faculty

Molly Berger, PhD
Associate Dean and Instructor of History Emerita
19th Century American Technology

David Hammack, PhD
(Columbia University)
Hiram C. Haydn Professor of History Emeritus
American social and urban history

Miriam Levin, PhD
(University of Massachusetts, Amherst)
Henry Eldridge Bourne Professor of History Emerita
History of industrial societies and cultures; history of modern France; women in science

Carroll Pursell, PhD
(University of California, Berkeley)
Adeline Barry Davee Distinguished Professor of History Emeritus
History of Technology

Alan Rocke, PhD
(University of Wisconsin, Madison)
Distinguished University Professor and Henry Eldridge Bourne Professor of History Emeritus
History of science; science, technology, and society

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

Virginia Dawson, PhD
(Case Western Reserve University)
Adjunct Associate Professor
History of science and technology

Amanda L. Mahoney, PhD
(University of Pennsylvania)
Chief Curator, Dittrick Medical History Center
History of health and social policy; history of nursing

Lecturers

David Busch, PhD
(Carnegie Mellon University)
Lecturer and SAGES Fellow
Modern U.S. history; history of student activism

Vicki Daniel, PhD
(University of Wisconsin, Madison)
Lecturer and SAGES Fellow
History of medicine

Bernard Jim, PhD
(Case Western Reserve University)
Lecturer and SAGES Fellow
19th- and 20th-century US history; American history of science and technology; gender; methodology

Andrea Milne, PhD
(University of California, Irvine)
Lecturer and SAGES Fellow
History of gender, sexuality and medicine

Luke Reader, PhD
(University of California, Irvine)
Lecturer and SAGES Fellow
Modern British history

Elizabeth Todd, PhD
(The Ohio State University)
Lecturer
Medieval history; Reformation Europe

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 113	Introduction to Modern World History	3
HSTY 250	Issues and Methods in History	3
HSTY 398	Senior Research Seminar	3

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 Program

The teacher education major for licensure in Integrated Social Studies (Adolescence to Young Adult) requires 30 hours of history, including the same three 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 must also take courses in economics, political science, and sociology (9 hours) and 36 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. 369) section in this bulletin.

Subject area requirements:

Requirements:

HSTY 103	Introduction to Medieval History, 500-1500	3
HSTY 105	Introduction to Modern European History, 1750-present	3
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	3
HSTY 210	Colonial America, 1607-1763	3
HSTY 211	The Era of the American Revolution, 1763 - 1789	3

HSTY 212	U.S. Politics, Culture, and Society, 1790-1860	3
HSTY 252A	Introduction to African-American Studies	3
HSTY 257	Immigrants in America	3
HSTY 260	U.S. Slavery and Emancipation	3
HSTY 262	African-American History Since 1945	3
HSTY 340	A History of Workers in the United States	3
HSTY 353	Women in American History I	3
HSTY 354	Women in American History II	3
HSTY 355	Age of American Civil War 1815-80	3
HSTY 359	Books as Bombs: Books that Reshaped American Culture	3
HSTY 361	Crime and Culture in Early America	3
HSTY 363	Gender and Sexuality in America	3
HSTY 373	Women and Medicine in the United States	3
HSTY 378	North American Environmental History	3
HSTY 387	Growing Up in America: 1607 - 2000	3
Two of the following:		6
HSTY 104	Introduction to Early Modern European History, 1500-1800	3
HSTY 151	Technology in European Civilization	3
HSTY 163	Introduction to Modern Britain and its Empire	3
HSTY 206	Ancient and Medieval Spain: Prehistory to 1492	3
HSTY 215	Europe in the 20th Century	3
HSTY 218	Jews in Early Modern Europe	3
HSTY 220	The Early Modern Mediterranean	3
HSTY 234	France and Islam	3
HSTY 235	Pirates in the Early Modern World	3
HSTY 236	World War I: Crucible of the 20th Century	3
HSTY 237	WWII from the British Empire Perspective	3
HSTY 254	The Holocaust	3
HSTY 278	Nineteenth-Century Europe	3
HSTY 309	Reformation Europe, 1500-1650	3
HSTY 310	The French Revolutionary Era	3
HSTY 332	European International Relations 1789-1945	3
HSTY 333	Reading Capital: Political Economy in the Age of Modern Industry	3
HSTY 334	History of 19th Century Germany	3
HSTY 335	History of 20th Century Germany	3
HSTY 345	The European City	3
HSTY 389	History of Zionism	3
Two of the following:		3
HSTY 132	Introduction to Modern East Asia	3

HSTY 135	Introduction to Modern African History	3
HSTY 136	Introduction to Latin American History	3
HSTY 137	Introduction to Modern South Asia	3
HSTY 157	Women's Histories in South Asia	3
HSTY 280	History of Modern Mexico	3
HSTY 288	Imperial China: The Great Qing	3
HSTY 289	Reform, Revolution, Republics: China 1895 to Present	3
HSTY 339	The Origins of the Arab-Israeli Conflict, 1900-1948	3
HSTY 371	Jews under Islam and Christianity	3
One of the following:		
ECON 102	Principles of Microeconomics	3
ECON 103	Principles of Macroeconomics	3
POSC 160	Introduction to Comparative Politics	3
One of the following:		
SOCI 101	Introduction to Sociology	3
One of the following:		
SOCI 113	Critical Problems in Modern Society	3
SOCI 310	The Individual in Society	3

(With advisor approval, the sociology requirement may be met with HSTY 212 U.S. Politics, Culture, and Society, 1790-1860 or HSTY 262 African-American History Since 1945.)

Integrated Graduate Studies

The Department of History participates in the Integrated Graduate Studies (IGS) Program (<http://bulletin.case.edu/undergraduatestudies/gradprofessional/#accelerationtowardgraduatedegree>). 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 consists 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

Beginning with the Fall 2018 semester, the Department of History will grant credit for one 3-hour elective to any student who has scored a 5 on any of the AP History tests, has been invited to participate in the 1-hour HSTY 100 Introduction to History, and has successfully completed that course. That 3-hour elective cannot be applied to the GER Breadth Requirement or to the major or minor in 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 30 hours of course work, including 9 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:

HSTY 470	Historiography, Method, and Theory	3
HSTY 476	Seminar in Comparative History	3
HSTY 479	Historical Research and Writing	3

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.

Courses

HSTY 100. Introduction to History. 1 Unit.

Team-taught by the faculty of the Department of History, under the coordination of the Chair or Director of Undergraduate Studies of the Department, HSTY 100 introduces students to the various theories and methods that underlie historical scholarship, and to the value of historical analysis to disciplines, careers, and professions that American popular culture depicts, wrongly, as being distant from historical understanding. HSTY 100 goes beyond high-school level teaching and analysis contained in Advanced Placement and International Baccalaureate courses to lead students to think about history as an analytical tool to understand every aspect of the lives that our students will lead in the 21st century. Students who successfully complete HSTY 100 will receive recognition of one three-credit course for a 5 on an AP History exam or a 6 or 7 on an IB Higher Level History exam. Prereq: Score of 5 on AP History Exam or Score of 6 or 7 on IB Higher Level History Exam.

HSTY 102. Introduction to Byzantine History, 500-1500. 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 102 and HSTY 102. Counts for CAS Global & Cultural Diversity Requirement.

HSTY 103. Introduction to Medieval History, 500-1500. 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. Counts for CAS Global & Cultural Diversity Requirement.

HSTY 104. Introduction to Early Modern European History, 1500-1800. 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 reformations; witchcraft and popular culture; science and medicine; Enlightenment and Revolution. Counts for CAS Global & Cultural Diversity Requirement.

HSTY 105. Introduction to Modern European History, 1750-present. 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 107. Introduction to the Ancient Near East and Egypt. 3 Units.

This is an introduction to the history and culture of the Ancient Near East and Egypt, a land spanning from modern Iraq to Egypt that was home to the earliest known societies in written history. In this course we will learn about the relatively recent discoveries of these ancient civilizations, the first deciphering of their scripts, about the political, social, and cultural history of the peoples who gave rise to the Babylonian, Assyrian, and Egyptian empires (besides other Levantine and Anatolian powers and smaller nations such as Israel). Various aspects of the literary/scientific production of these societies will also be discussed, while reflecting upon their cultural legacy. Offered as ANEE 107 and HSTY 107. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

HSTY 109. Modern American History Since 1877. 3 Units.

This course provides an introductory survey of American history from the end of Reconstruction through the early 21st century, focusing on politics, foreign relations, the economy, and culture and social life. It is designed not to replicate high school American history courses, but introduce undergraduates to major themes in how academic historians approach the past, as well as instructing students on how to read, discuss, and write about primary sources. Counts for CAS Global & Cultural Diversity Requirement.

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 111. What is Science? Introduction to the History and Philosophy of Science. 3 Units.

We look at historical and philosophical aspects of modern science. The objective of the course is to develop a sense of (1) what forms scientific research has taken historically, and (2) what it is about scientific research that makes it distinctive as a form of human knowledge. Offered as HPSC 111, PHIL 111 and HSTY 111.

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. Counts for CAS Global & Cultural Diversity Requirement.

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 decided 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. Counts for CAS Global & Cultural Diversity Requirement.

HSTY 124. Sex and the City: Gender and Urban History. 3 Units.

Gender is an identity and an experience written onto the spaces of the city. The urban landscape—with its streets, buildings, bridges, parks and squares—shapes and reflects gender identities and sexual relations. This course examines the relationship between gender and urban space from the 19th century to the present, giving special attention to the city of Cleveland. Using Cleveland as our case study, this course will explore some of the many ways in which cities and the inhabitants of cities have been historically sexed, gendered, and sexualized. We will explore the ways in which gender was reflected and constructed by the built environment, as well as how urban space and urban life shaped gender and sexual identities. The course is organized thematically and explores different aspects of city life such as prostitution, urban crime, labor, politics, urban renewal and decay, consumption and leisure and the ways in which sex and gender intersects with these issues. Offered as HSTY 124 and WGST 124.

HSTY 126. Fashion and Power: The Politics of Dress in American History. 3 Units.

Clothing is one of the most visible and accessible means through which we express our identities. Hence, it is hardly surprising that political and social tensions are embedded and embodied in dress. As an expressive medium, clothing and appearance became crucial in the construction of political identities and in serving as a means of control, oppression, as well as protest and resistance. This seminar will examine the links between clothing, sartorial practices and political significance. Special attention will be given to the role of clothes in negotiating and constructing gender, race, class, sexual, and national identities. Readings will address the question of sartorial politics from a historical perspective and will focus on American history and culture from the 18th century to the present. Students may not earn credit for both this course and USSO 290U. Counts for CAS Global & Cultural Diversity Requirement.

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 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. Counts for CAS Global & Cultural Diversity Requirement.

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 AFST 135, ETHS 253A and HSTY 135. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

HSTY 151. Technology in European Civilization. 3 Units.

The history of technology in ancient Mediterranean, medieval, and modern European society until the First World War. The course introduces students to the relationship between technology and its social, political, and cultural settings, and to the values invested in technology at significant historical moments. There will be visits to local industrial sites, architectural and engineering monuments, and the Cleveland Museum of Art.

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. Counts for CAS Global & Cultural Diversity Requirement.

HSTY 163. Introduction to 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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Revolutions in Science. 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. Counts for CAS Global & Cultural Diversity Requirement.

HSTY 207. Philosophy of Science. 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 209. The Copernican Revolution. 3 Units.

This course will introduce students across the disciplines to the story of the Copernican Revolution, beginning with pre-Copernican astronomy and then moving from Copernicus' first writings to Newton's Principia of 1687, which united the new heavenly laws of Kepler with the new earthly laws of Galileo. Throughout the course, students will chart the Copernican Revolution's pathways, forms, and effects, through texts, letters, maps, images, and fiction. Students also will consider various historical interpretations of the Copernican Revolution in order to explore different conceptions of what science is and how science works. The course will include a number of hands-on activities and trips to help students consider the meaning and implications of the Copernican Revolution outside of our readings and classroom discussions.

HSTY 210. Colonial America, 1607-1763. 3 Units.

Survey of colonial British North America from the first permanent English settlements to the onset of the Revolutionary era, tracing the development of distinctive societies in the New England, Chesapeake, Delaware Valley, and southern backcountry regions. Topics include the struggles and accomplishments of free African Americans in early Virginia; the divergent experiences and representations of women in early New England, ranging from exemplary Puritan role models to condemned witches and other capital criminals; the rise of large-scale race slavery in the Chesapeake; the radical gender egalitarianism of Quakers in the Delaware Valley; the belligerent libertarianism of Scotch-Irish settlers in the southern backcountry; and the evolving responses of Native Americans to the ongoing Anglo-American invasion. Counts for CAS Global & Cultural Diversity Requirement.

HSTY 211. The Era of the American Revolution, 1763 - 1789. 3 Units.

This is a 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. It begins with some background coverage of the colonial period (1607-1763), but focuses primarily on the underlying causes of the American Revolution, the chain of events leading to the Declaration of Independence, the war with England, postwar conflicts of the 1780s, the Constitutional Convention, and the ratification struggle that followed, with a look forward to the so-called Whiskey Rebellion of 1794. Lectures, readings, and discussions explore the Revolutionary crisis as a complex, multi-racial, transatlantic struggle involving Native Americans, African Americans (enslaved and free), poor whites, wealthy Anglo-American planters and merchants, Scottish traders, and British administrators, as well as multi-racial and multi-national military forces organized on radically opposing principles. The course also examines competing scholarly interpretations of the Revolution as a progressive or retrograde watershed in American gender relations. Counts for CAS Global & Cultural Diversity Requirement.

HSTY 212. U.S. Politics, Culture, and Society, 1790-1860. 3 Units.

This is a survey of U.S. history 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. Lectures, readings, and discussions will also explore race slavery in the South, abolitionism, the social and economic struggles of free African Americans in the North, the gender ideology of domesticity, the changing social and economic status of women, and the emergence of the women's rights movement. Counts for CAS Global & Cultural Diversity Requirement.

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 destitution, 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. Counts for CAS Global & Cultural Diversity Requirement.

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 descendents—Normans and "Rus." Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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 and HSTY 220. Counts for CAS Global & Cultural Diversity Requirement.

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 223. The Cold War. U.S. and the World. 3 Units.

This course provides an introduction to the history of the Cold War from both American and global perspectives. What explains the origins and maintenance of the conflict? Can it really be considered a "cold" war when so much actual "hot" conflict took place during its organization of the international system? Why did the U.S. go to war in Korea and Vietnam and with what results? How did the rest of the world not directly aligned with the United States or the Soviet Union experience the conflict? How were American domestic politics and social life shaped by the conflict? How did earlier sites of conflict in Europe and East Asia give way to new ones in the Middle East and Latin America? How did the conflict reshape global science, technology, and ecologies? How did the conflict reshape ideas about human rights? Why did the Cold War end when it did and what international system replaced it—or did it even end at all? Counts for CAS Global & Cultural Diversity Requirement.

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. Asian Americans: Histories, Cultures, Religions. 3 Units.

This course introduces students to Asian American Studies as an interdisciplinary academic discipline. It critically examines the global and transnational dimensions of U.S. history, the constructions of "modernity" in the U.S., and the shaping of U.S. culture and religion, race and racialization, identity constructions and contestations, law and law-making, colonialism and empire building, labor and migration, politics and public policy making, and social movements through a critical study of Asian Americans and their diverse histories, cultures, religions, identity negotiations and contestations, social movements, and political activism. Offered as ETHS 228, HSTY 228 and RLGN 228. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

HSTY 230. Colonial Latin America. 3 Units.

Colonial Latin American history is a period fraught with bloodshed, deadly disease, and the brutal enslavement of Africans and Indigenous peoples, yet was also a time of resistance, mobilization, and the flourishing of arts, culture, and unique hybrid religious practices. This course is an invitation to focus on primary sources and wrestle with the writing of colonial history throughout the last 500 years, with all its discrepancies, biases, and unanswered questions. We look especially at the role that women, Indigenous peoples, and Africans played in society—voices that have traditionally been silenced. How can we resurrect those voices? We ponder the construction of colonial society and conclude with how the wars of Independence fundamentally altered society.

HSTY 231. Athens to Alexandria: The World of Ancient Greece. 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. Counts for CAS Global & Cultural Diversity Requirement.

HSTY 232. Gods and Gladiators: The World of Ancient Rome. 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. Counts for CAS Global & Cultural Diversity Requirement.

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 and HSTY 234. Counts as SAGES Departmental Seminar. Counts for CAS Global & Cultural Diversity Requirement.

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? Counts for CAS Global & Cultural Diversity Requirement.

HSTY 236. World War I: Crucible of the 20th Century. 3 Units.

World War I changed everything about Europe and ushered in a changed century of tumult, war, and division. The European experience of the regimentation of the economy and daily life, the impact of new technology on warfare, and the very personal suffering of separation and loss changed how those on that continent viewed their countries and their world. The war affected everything from gender relations to class relations to religious and ethnic relations and laid the foundation for even more disruption ahead. Its legacy reaches our day and colors our own views of what is normal and what is possible. This course will explore those multiple and manifold legacies of this founding experience of modernity. Counts for CAS Global & Cultural Diversity Requirement.

HSTY 237. WWII from the British Empire Perspective. 3 Units.

This lecture and discussion course gives students the opportunity to learn about the Second World War from the perspective of the British and their soldiery from around the globe. Many might come to the course with images of the American "Bands of Brothers" fighting across France in 1944. But that was the end of the war. In the beginning, it fell to the British leadership (famously embodied by Winston Churchill), British people, and to an extraordinary extent the Indian Army to withstand a pummeling at the hands of the Axis powers long enough for America to join the conflict. The course will examine those in Britain who might have preferred a move towards Fascism in the late 1930s. It will investigate why imperial subjects who lacked democracy in their own lands fought for the British in the name of democracy against totalitarianism. And it will scrutinize those in the Empire who instead sided with the Axis. In sum, students will have an opportunity to learn what led to those many moments of choice and chance that led to Allied victory and the defeat of Fascism. Offered as HSTY 237 and HSTY 447. Counts for CAS Global & Cultural Diversity Requirement.

HSTY 239. Freud and the Psychoanalytic Movement. 3 Units.

This is a course in the social history of ideas, which will examine the roots and development of psychoanalysis, and consider several major post-Freudian innovators. It will conclude with interpretations of the social context and social effects of psychoanalysis. Offered as HSTY 239 and HSTY 439.

HSTY 240. Shopping for Change: Consumer Culture and Social Movements in America. 3 Units.

Consumption has been central to American political, economic, and social life. Americans have engaged in individual and collective action as consumers to fight corporate malfeasance, to influence legislators, and to assert consumers' rights. Yet being a consumer is also a political practice, and forms of consumer activism have been central to some of the most important struggles for social justice, political rights, and freedom in America. This seminar examines the connections between consumption and politics by looking at the role that consumer identities and activism played in various social movements throughout the twentieth century, from the Kosher Meat Boycott of 1902 to the present. By reading primary and secondary sources, we will examine how consumption was a means to challenge gender, race, and class barriers, to claim equality and citizenship, and to fight social injustice. However, in looking at these struggles over access, control, and rights, we will also examine how the focus on consumption was used to co-opt subversive political messages and to contain radicalism.

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. Counts for CAS Global & Cultural Diversity Requirement.

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 245. History of Capitalism. 3 Units.

This course will explore the history of capitalism, from its origins to its recent past, from different angles. Themes under discussion will include, but not be limited to, industrialization, slavery, corporate capitalism, and neoliberalism. We will also study capitalism's impact on gender, race, environment, education, and time. Counts for CAS Global & Cultural Diversity Requirement.

HSTY 248. Digital History Internship with the Encyclopedia of Cleveland History. 3 Units.

This directed digital history internship focuses on familiarizing students with the evolving nature of on-line, vetted historical resources, most particularly encyclopedias and other multi-authored datasets, and providing experience in expanding and maintaining a major web-based historical resource. Students will work with the editor (the instructor for the course) and the graduate student associate editors of the on-line edition of the Encyclopedia of Cleveland History (<https://case.edu/ech/>) in creating new content for the on-line edition of the Encyclopedia and in modifying and enhancing its website, as well as assisting with the management of its social media components. The Encyclopedia of Cleveland History was the first urban encyclopedia on the Web, and today its site averages over 800,000 "hits" per month. Work on the Encyclopedia will be complemented by weekly assigned readings relating to the evolution of digitally-based historical works and more generally to the issues of professional authority and veracity that have come to complicate historical discourse on the Web. These readings will serve as the basis for a seminar-style weekly meeting and for a topically focused research paper due at the end of the semester. The internship itself will require students to research and write at least ten new short entries for inclusion in the Encyclopedia; to assist the staff in preparing social media announcements; and to engage as needed in modifying the website.

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. Counts for CAS Global & Cultural Diversity Requirement.

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, RLG 254, ETHS 254, and JDST 254. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

HSTY 258. History of Southern Africa. 3 Units.

A survey of southern Africa from about 1600. Topics include the social structure of pre-colonial African societies, the beginnings of European settlement, the rise of Shaka, the discovery of minerals and the development of industry, Zimbabwe's guerrilla war and independence, and the rise and apparent demise of apartheid. Offered as AFST 258, ETHS 258 and HSTY 258. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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 AFST 260, ETHS 260 and HSTY 260. Counts for CAS Global & Cultural Diversity Requirement.

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 AFST 261, ETHS 261 and HSTY 261. Counts for CAS Global & Cultural Diversity Requirement.

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 AFST 262, ETHS 262 and HSTY 262. Counts for CAS Global & Cultural Diversity Requirement.

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, RLG 270, SOCI 201, and WGST 201. Counts for CAS Global & Cultural Diversity Requirement. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCS, 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. Counts for CAS Global & Cultural Diversity Requirement.

HSTY 278. Nineteenth-Century Europe. 3 Units.

This course examines the history of Europe during the so-called long nineteenth century, lasting from the French Revolution, which signaled the end of the Old Order, through World War I, which led to the end of the European primacy in the world. Major themes include decline of aristocratic hegemony, the emergence of new ideologies (especially nationalism, liberalism, and socialism), the rise of the bourgeoisie, culture in Europe's golden age, and increasing national rivalry and competition. Counts for CAS Global & Cultural Diversity Requirement.

HSTY 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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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 socio-economic 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. Counts for CAS Global & Cultural Diversity Requirement.

HSTY 294. History of Nature. 3 Units.

What is nature, and what counts as natural? This course will examine the complicated and varied historical relationships between people and the natural world in the west. Like humans, nature, too, has a history, and its meanings, boundaries, and uses have changed dramatically over time. By studying those changes, we gain insight not merely into the world we inhabit and the ways that we have shaped it, for better or worse, but also into ourselves—our beliefs, values, and ambitions. The course will cover approaches to nature from the ancient Greeks to the modern anthropocene. We will look at how nature has been understood over time not only through texts but also through art, objects, and film. The course will include visits to various local sites in order for us to pursue these themes in a hands-on way.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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 308. Body, Health and Medicine in Chinese Religions: Historical and Contemporary Perspectives. 3 Units.

This course critically evaluates the history and development of traditional Chinese approaches to health and medicine in the context of Chinese religious, philosophical, and socio-cultural history. It examines the constructions of the body in Chinese religious and philosophical thought across different historical periods and evaluates their significance and implications for understanding Chinese approaches to health and medicine. It discusses the conceptions of "health" and "good health" in ancient China, the distinction between "healing" and "curing," the development of the complementary yin-yang and five phases (wuxing) theories, understandings of nature (xing) and body (ti), the concept of qi as life force, and various microcosm-macrocosm analogies that emerged from Chinese religious and philosophical traditions. It explores how these religious and philosophical frameworks, beginning with the Daoist classic, *Basic Questions in the Inner Classic of the Yellow Emperor* (Huangdi Neijing Suwen) have evolved to undergird the development of diet, acupuncture, moxibustion, meditation, and various alchemical practices within Chinese holistic conceptions of health and practices of Traditional Chinese Medicine. Offered as RLGN 307, RLGN 407, CHIN 307, HSTY 308, and ETHS 307. Counts as SAGES Departmental Seminar. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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 AFST 318, 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. Counts for CAS Global & Cultural Diversity Requirement.

HSTY 320. Alexander the Great: Materials and Methods. 3 Units.

This course is the Classics Departmental Seminar in the SAGES sequence (normally taken in the Spring semester of a major's Junior year), though it can also be taken for regular credit in Classics or History by both undergraduate and graduate students. The seminar offers students a firm grounding in the discipline of Classics with an emphasis on the diverse materials (particularly primary source material), methods and approaches that can be brought to bear on the study of Greco-Roman antiquity. Students will read and discuss the ancient sources and contemporary scholarship on the enigmatic Alexander the Great drawn from various fields of classics, including history, archaeology, art history, philosophy, gender studies, epigraphy, numismatics, and the reception of Alexander. Based upon this, they will then write a research paper that employs conventions found in the field of Classics. Much of this training, however, will also be transferable to other fields and periods. Because the scope of the seminar moves (along with Alexander himself) beyond Europe and examines the historical foundations of the antagonism between East and West, this course qualifies as a Global and Cultural Diversity course. Offered as CLSC 320, CLSC 420, HSTY 320 and HSTY 420. Counts as SAGES Departmental Seminar. Counts for CAS Global & Cultural Diversity Requirement.

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 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 "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. Counts for CAS Global & Cultural Diversity Requirement.

HSTY 322. Christianity in China. 3 Units.

This course critically evaluates Christianity's long history in China, beginning with the "Luminous Religion" (Jingjiao) that was propagated by Assyrian Christian missionaries in Tang China (7th century CE), the missionary endeavors of Catholic and Protestant foreign missionaries and mission societies, the rise of indigenous Chinese Christianities that sought independence from foreign missionaries, the impact of communist rule and the Cultural Revolution, and current developments involving both the official government-approved churches (i.e., the Three Self Patriotic Movement and the Chinese Patriotic Catholic Association) on the one hand, and the house church movement (jiating jiaohui) on the other hand. Students will critically discuss and analyze the historical dimensions of Christianity's presence in China and engagement with various social, cultural, political, philosophical, and religious aspects of Chinese society, past and present, and consider the implications of emergent forms of contemporary indigenous Chinese Christian movements for the future of Chinese Christianity. Offered as RLG 316, RLG 416, HSTY 322, CHIN 316 and ETHS 326. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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 RLG 326 Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Offered as HSTY 333 and HSTY 433. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

HSTY 337. Ancient Medicine. 3 Units.

This course offers a general survey of the history of medicine from its origins in pre-historical times to Galen (2nd c. CE) with a view to gaining a better understanding of the path that eventually lead to modern medical practice. The various medical systems considered, including the ancient Babylonian, Egyptian, Jewish, Chinese, Ayurvedic, Greek and Roman traditions, will be examined through the study of primary and secondary sources, while key conceptual developments and practices are identified within their cultural and social context. Special issues, such as epidemics, women's medicine, and surgery, are also explored and discussed. Offered as ANEE 337, CLSC 337, CLSC 437, HSTY 337, and HSTY 437. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts as SAGES Departmental Seminar. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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 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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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 1945. 3 Units.

This course provides an advanced survey of American history from 1945 through the early 21st century, focusing on politics, foreign relations, the economy, culture, and social life. Particular emphasis will be given to political economy and the development of postwar consumerism; race, segregation, and Civil Rights; social movements for women's liberation, Indian rights, and gay rights; the accomplishments and failures of postwar liberalism and the rise of modern conservatism; the emergence of the Cold War at home and abroad; the collapse of the New Deal Order and the new partisan realignment; the construction of the postwar international system and its late-century fraying; globalization and its discontents; the emergence of neoliberalism and its consequences; and the collapse of the Cold War and the creation of the War on Terror.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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, childbearing, and menopause, before exploring the cultural relationship between women and psychological disorders. Offered as HSTY 373, HSTY 473, and WGST 373. Counts for CAS Global & Cultural Diversity Requirement.

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 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.

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. Counts for CAS Global & Cultural Diversity Requirement.

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? Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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 AFST 393, HSTY 393, HSTY 493, and ETHS 393. Counts for CAS Global & Cultural Diversity Requirement.

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 Units.

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 AFST 399, 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 420. Alexander the Great: Materials and Methods. 3 Units.

This course is the Classics Departmental Seminar in the SAGES sequence (normally taken in the Spring semester of a major's Junior year), though it can also be taken for regular credit in Classics or History by both undergraduate and graduate students. The seminar offers students a firm grounding in the discipline of Classics with an emphasis on the diverse materials (particularly primary source material), methods and approaches that can be brought to bear on the study of Greco-Roman antiquity. Students will read and discuss the ancient sources and contemporary scholarship on the enigmatic Alexander the Great drawn from various fields of classics, including history, archaeology, art history, philosophy, gender studies, epigraphy, numismatics, and the reception of Alexander. Based upon this, they will then write a research paper that employs conventions found in the field of Classics. Much of this training, however, will also be transferable to other fields and periods. Because the scope of the seminar moves (along with Alexander himself) beyond Europe and examines the historical foundations of the antagonism between East and West, this course qualifies as a Global and Cultural Diversity course. Offered as CLSC 320, CLSC 420, HSTY 320 and HSTY 420. Counts as SAGES Departmental Seminar. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement. 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. Counts for CAS Global & Cultural Diversity Requirement.

HSTY 433. 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. Offered as HSTY 333 and HSTY 433. Counts for CAS Global & Cultural Diversity Requirement.

HSTY 437. Ancient Medicine. 3 Units.

This course offers a general survey of the history of medicine from its origins in pre-historical times to Galen (2nd c. CE) with a view to gaining a better understanding of the path that eventually lead to modern medical practice. The various medical systems considered, including the ancient Babylonian, Egyptian, Jewish, Chinese, Ayurvedic, Greek and Roman traditions, will be examined through the study of primary and secondary sources, while key conceptual developments and practices are identified within their cultural and social context. Special issues, such as epidemics, women's medicine, and surgery, are also explored and discussed. Offered as ANEE 337, CLSC 337, CLSC 437, HSTY 337, and HSTY 437. Counts for CAS Global & Cultural Diversity Requirement.

HSTY 439. Freud and the Psychoanalytic Movement. 3 Units.

This is a course in the social history of ideas, which will examine the roots and development of psychoanalysis, and consider several major post-Freudian innovators. It will conclude with interpretations of the social context and social effects of psychoanalysis. Offered as HSTY 239 and HSTY 439.

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 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. Counts for CAS Global & Cultural Diversity Requirement.

HSTY 447. WWII from the British Empire Perspective. 3 Units.

This lecture and discussion course gives students the opportunity to learn about the Second World War from the perspective of the British and their soldiery from around the globe. Many might come to the course with images of the American "Bands of Brothers" fighting across France in 1944. But that was the end of the war. In the beginning, it fell to the British leadership (famously embodied by Winston Churchill), British people, and to an extraordinary extent the Indian Army to withstand a pummeling at the hands of the Axis powers long enough for America to join the conflict. The course will examine those in Britain who might have preferred a move towards Fascism in the late 1930s. It will investigate why imperial subjects who lacked democracy in their own lands fought for the British in the name of democracy against totalitarianism. And it will scrutinize those in the Empire who instead sided with the Axis. In sum, students will have an opportunity to learn what led to those many moments of choice and chance that led to Allied victory and the defeat of Fascism. Offered as HSTY 237 and HSTY 447. Counts for CAS Global & Cultural Diversity Requirement.

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 cultural 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 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. Counts for CAS Global & Cultural Diversity Requirement. 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. Counts for CAS Global & Cultural Diversity Requirement. 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. Counts for CAS Global & Cultural Diversity Requirement.

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, childbearing, and menopause, before exploring the cultural relationship between women and psychological disorders. Offered as HSTY 373, HSTY 473, and WGST 373. Counts for CAS Global & Cultural Diversity Requirement. Prereq: Graduate standing or instructor permission.

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. Counts for CAS Global & Cultural Diversity Requirement.

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 AFST 393, HSTY 393, HSTY 493, and ETHS 393. Counts for CAS Global & Cultural Diversity Requirement.

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 Units.

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 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 AFST 399, ETHS 391, HSTY 399 and HSTY 499. Prereq: Graduate standing or instructor permission.

HSTY 601. Independent Studies. 1 - 18 Units.

(Credit as arranged.)

HSTY 651. Thesis M.A.. 1 - 18 Units.

(Credit as arranged.)

HSTY 701. Dissertation Ph.D.. 1 - 9 Units.

(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.

AMST (AMST)

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 decided 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. Counts for CAS Global & Cultural Diversity Requirement.

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.

HPSC (HPSC)

Course

HPSC 111. What is Science? Introduction to the History and Philosophy of Science. 3 Units.

We look at historical and philosophical aspects of modern science. The objective of the course is to develop a sense of (1) what forms scientific research has taken historically, and (2) what it is about scientific research that makes it distinctive as a form of human knowledge. Offered as HPSC 111, PHIL 111 and HSTY 111.

History and Philosophy of Science Program

Clark Hall 203

www.case.edu/artsci/hpst (<http://www.case.edu/artsci/hpst/>)

Phone: 216.368.2632

Colin McLarty, Program Director

colin.mclarty@case.edu

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.

Department Faculty

Colin McLarty, PhD

Truman P. Handy Professor of Philosophy and Chair, Department of Philosophy; Director, History and Philosophy of Science Program

Chris Haufe, PhD

Associate Professor, Department of Philosophy

Aviva Rothman, PhD

Assistant Professor, Department of History

Jonathan Sadowsky, PhD

Theodore J. Castele Professor, Department of History

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

PHIL 101	Introduction to Philosophy
HSTY 151	Technology in European Civilization
HSTY 201	Science in Western Thought I
HSTY 202	Science in Western Thought II
HSTY/PHIL 203	Revolutions in Science
PHIL 204/ HSTY 207	Philosophy of Science

PHIL 302	Modern Philosophy	
HSTY/PHIL 390	Senior Research Seminars in History and Philosophy of Science	3
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
PHIL 101	Introduction to Philosophy	
HSTY 202	Science in Western Thought II	
HSTY/PHIL 203	Revolutions in Science	
HSTY 207/ PHIL 204	Philosophy of Science	
PHIL 302	Modern Philosophy	
Two electives approved by the minor advisor		6
Total Units		15

International Studies Program

111 Mather House

<http://artsci.case.edu/international-studies/>

Phone: 216.368.5565; Fax: 216.368.4681

Kelly McMann, Program Director

kelly.mcmann@case.edu

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, 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.

Faculty

Kelly McMann, PhD

(University of Michigan)

Professor, Department of Political Science; Director, International Studies Program

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. Two courses from each other major or minor can count simultaneously toward the international studies major if they fit the requirements. 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 students with the analytical tools and frameworks to understand global issues.

ANTH 102	Being Human: An Introduction to Social and Cultural Anthropology	3
ECON 103	Principles of Macroeconomics	3
HSTY 113	Introduction to Modern World History	3
POSC 172	Introduction to International Relations	3

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 Caribbean, and the Middle East and North Africa.

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 business, 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 area or topical courses. These courses should be selected in consultation with the International Studies Program director.

6. **Senior Project** (required course, INTL 399 International Studies Colloquium, 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. In the required course, 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.

7. **Language Competency** (0 to 16 credit hours): In addition to the 33 credit hours of international studies course work, students must demonstrate competency in a language other than their native language. This may be done by:

1. completing a language course at the 300 level or above
2. completing four semesters in a single language
3. demonstrating to the Department of Modern Languages and Literatures a non-native language competency equivalent to that attained by completing a 300-level or above course

Honors: Honors are awarded to students who meet three requirements: an exceptional senior project (grade of A), a 3.3 overall GPA, and a 3.7 GPA in international studies courses (area focus, topical focus, and electives).

There is no minor in international studies. International studies can be a secondary major.

Courses

INTL 396. International Independent Study. 1 - 3 Units.

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. Counts as SAGES Senior Capstone.

Japanese Studies Program

103 Guilford House
Phone: 216-368-6188; Fax: 216-368-2216
Takao Hagiwara, Program Director
takao.hagiwara@case.edu

Today's students find themselves in a world of increasingly multi-ethnic, multi-religious, and multicultural contexts. Through a long history of receiving, reworking, and incorporating influences from nearby cultural centers on the Asian mainland, from 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.

Program Faculty

Takao Hagiwara, PhD
(University of British Columbia)
Associate Professor, Department of Modern Languages and Literatures;
Director, Japanese Studies Program
Modern Japanese literature

Beth M. Carter, PhD
(University of Pennsylvania)
Assistant Professor, Department of Modern Languages and Literatures;
Undergraduate studies advisor, Japanese Studies Program
Premodern Japanese literature

Lecturers

Margaret M. Fitzgerald, MA
(Ohio State University)
Lecturer, Department of Modern Languages and Literatures
Japanese Linguistics

Yoshiko Kishi, MA
(New York University)
Lecturer, Department of Modern Languages and Literatures
Japanese Pedagogy

Yukiko (Nishida) Onitsuka, EdD
(University of Cincinnati)
Lecturer, Department of Modern Languages and Literatures
Literacy and second language studies

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:

JAPN 201	Intermediate Japanese I	4
JAPN 202	Intermediate Japanese II	4
JAPN 301	Advanced Japanese I	4
JAPN 302	Advanced Japanese II	4
JAPN 350	Contemporary Japanese Texts I *	3
or JAPN 450	Japanese in Cultural Context I	
JAPN 351	Contemporary Japanese Texts II *	3
or JAPN 451	Japanese in Cultural Context II	
JAPN 397	Senior Thesis I **	3
JAPN 398	Senior Thesis II **	3
Four Asian studies, world literature, or other related courses. ***		12
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. Permission of Japanese Studies advisor required.

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:

JAPN 215	The World of Manga	3
JAPN/WLIT 225	Japanese Popular Culture	3
JAPN 235	The Japan Experience: Kyoto - Language, Culture & Exchanges	3
JAPN/WLIT 245	Classical Japanese Literature in Translation	3
JAPN/WLIT 255	Modern Japanese Literature in Translation	3
JAPN/WLIT 265	Constructing the Samurai: Images of Japanese Warriors from 1100's to the Present	3
JAPN/WLIT 315	Origins of Anime: Classical Texts, Modern Manga, Anime, and Tales	3
JAPN/WLIT 345	Japanese Women Writers	3
JAPN/WLIT 355	Modern Japanese Novels and the West *	3
JAPN 399	Independent Study	1 - 3

* This course counts toward the General Education Requirements.

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

Study abroad in Japan is highly recommended, preferably for a year, a semester, or even short term (see JAPN 235 The Japan Experience: Kyoto - Language, Culture & Exchanges). All efforts are made to grant appropriate credit for courses taken at a Japanese university during the study abroad experience.

Minor

For students beginning Japanese at the introductory level, the course requirements for the minor are as follows:

JAPN 101	Elementary Japanese I	4
JAPN 102	Elementary Japanese II	4

JAPN 201	Intermediate Japanese I	4
JAPN 202	Intermediate Japanese II	4
One 300-level course		3
Total Units		19

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 the program director.

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.

Continuation of JAPN 101. Emphasizes aural comprehension, speaking, reading, and writing. Students learn approximately 100 new kanji characters. Recommended preparation: JAPN 101.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

JAPN 215. The World of Manga. 3 Units.

Manga (comic books and graphic novels) is one of the most important aspects of contemporary visual culture in Japan. It is consumed by millions of Japanese every day, and has attracted intense attention around the world. As it constitutes one third of the annual publications in Japan today, its breadth and scope are limitless. What does manga reveal about contemporary cultural production and consumption in Japan? What kind of special features are used in manga to attract people so much? What kind of genres do they have and what kind of readers do they have? These are some of the questions we will explore by surveying a large number of works produced in the last fifty years. Introducing graphic novels by major artists and writers, the course will expand your understanding of key components, social movements and discourses associated with manga. You will examine the history of manga, its aesthetics, and social impact through assigned readings, including scholarly papers and manga books, as well as works selected by each student (in original Japanese or in English translation).

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. Counts for CAS Global & Cultural Diversity Requirement.

JAPN 235. The Japan Experience: Kyoto - Language, Culture & Exchanges. 3 Units.

The Japan Experience: Kyoto is designed to provide students an opportunity to use Japanese language skills they have acquired in real life situations and deepen their understanding of Japanese language and culture through experiential learning. The course has three major learning components: "Japanese Language Learning through Activities and Cultural Experiences," "Japan Exploration Project," and "Exchanges with Local College Students" and will consist of class meetings before the trip focused on preparation followed by 15 days in Kyoto. Japanese Language Learning through Activities and Cultural Experiences: In Kyoto students will explore the local neighborhood and report their findings in class. Several cultural activities will be organized: Zen meditation, tea activity, Japanese cooking class, etc. The tea activity will include a rare opportunity for students to meet a tea ceremony master and experience the way of Japanese traditional tea. Exchanges with Local College Students: Students from CWRU will be able to take advantage of Ritsumeikan University's "Buddies" program where Japanese student volunteers are paired with participants to improve conversational skills and become better acquainted with the campus and Kyoto. CWRU students will also visit classes at a local college in Osaka for exchanges with students there. These exchanges will allow participants to reinforce their language skills, develop better communication skills, and deepen cultural understanding in both classroom and real-life settings. Japan Exploration Project: Students will complete individual projects during the course. They will design their own projects using resources available in Kyoto before the trip and prepare for it. Project themes will be chosen by students based on their interests. At the end of course, students will give presentations in Japanese, demonstrating their language proficiency development. Counts for CAS Global & Cultural Diversity Requirement. Prereq: JAPN 201.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

JAPN 265. Constructing the Samurai: Images of Japanese Warriors from 1100's to the Present. 3 Units.

From concepts of premodern warriors calling out their names before doing hand-to-hand combat to modern salary men crushing the world with their economic prowess, samurai have come to be an iconic image of the Japanese people. Throughout the semester we will pay particular attention to the central themes in the historiography of warrior society, roughly, the years between ca. 1110 and 1850 C.E. We will investigate how these documents were translated by modern societies, both east and west, in samurai film. Students will explore the category of "samurai" through reading selections from *The Tale of the Heike*, as well as selected Noh plays, legal documents, travel diaries, autobiographies, short stories, and historical texts. In addition, we will investigate other genres contributing to the construction of the idea of "samurai," such as film. This seminar will closely examine the concept of "samurai," particularly its connection to the Japanese identity using an interdisciplinary context of the arts, history, religion, and literature. We will also explore the ways in which daimyo (feudal lords), authors, Buddhist officials, and filmmakers throughout the world created, shaped, and altered the ideal image of the samurai. Key to understanding the concept of samurai will be wrestling with questions of authorship, spirit pacification, nationality, and patronage, with specific focus on the Japanese relationship with Western nations and cultures. We will focus on language and its role in legitimizing the global concepts of "samurai" and "bushido." This class will provide additional insight geared toward the cultural study of linguistic identities beyond those informed by the English language and will include terms expressed in Japanese. Many of the resources used in this course will be translated from the Japanese, allowing us to consider Naoki Sakai's theories of enunciation/ translation/ subjectivity, Haruo Shirane's theory of reception, and Michael Emmerich's theory of replacement. Especially important will be to focus on terms in Japanese with no, or poor, English equivalent (such as samurai, shogun, daimyo, bushido, etc.) but with clear images in the English-speaking imagination(s). The instructor will provide background information on political, cultural, and religious history. Class sessions will be conducted in English and combine lectures, discussion, audio-visual materials, and creative as well as analytical writing exercises. All readings and films will be in English or with English subtitle. Offered as JAPN 265 and WLIT 265. Counts for CAS Global & Cultural Diversity Requirement.

JAPN 301. Advanced Japanese I. 4 Units.

Emphasizes conversational proficiency and reading. Recommended preparation: JAPN 202 or equivalent. Counts for CAS Global & Cultural Diversity Requirement.

JAPN 302. Advanced Japanese II. 4 Units.

Continuation of JAPN 301; emphasizes conversational proficiency and reading. Recommended preparation: JAPN 301 or equivalent. Counts for CAS Global & Cultural Diversity Requirement.

JAPN 315. Origins of Anime: Classical Texts, Modern Manga, Anime, and Tales. 3 Units.

Modern anime and manga authors and artists captivate audiences with rich stories and stylized art. This course investigates the origins of these stories by engaging premodern Japanese texts (in English language translation) and modern literary theory. Throughout the semester we will pay particular attention to commonalities among these literatures and narrative genres, as well as the extent they differ due to temporal/socio/religio/political concerns. Western and Asian literary theories, especially those concerning topics of translation, replacement, negotiation with classics, and gender and sexuality will also be extensively explored. We will interpret the historic human endeavor of story telling within the contexts of time and space and through a critical self-awareness of our own positions in the modern world. Students will prepare individual research projects and be responsible for finding and presenting primary sources and secondary research. The instructor will provide background information on political, cultural, and religious history as well as present on details of literary theory. The aim is to encourage students to critically analyze the modern perception of past events. Every topic will be addressed in three phases. First, the students will discover historical events, literature, and people through reading primary sources in English translation. In a second phase, we will see how these stories are depicted in movies, animation, or manga. Finally, students will perform research to explore the differences between the premodern sources and their modern adaptation and determine how we can use such a comparison to critically analyze the way modern storytellers recreate the past. Class sessions will combine lectures, discussion, and audio-visual materials. Offered as JAPN 315 and WLIT 315. Counts for CAS Global & Cultural Diversity Requirement.

JAPN 335. Japanese Linguistics. 3 Units.

The purpose of this course is to survey the principal research in Japanese linguistics for students who have basic knowledge of Japanese and are interested in more in-depth treatment of linguistic phenomena (phonetics, phonology, morphology, syntax, semantics, etc.). Lectures and discussions will cover many different aspects of the Japanese language. There is a great deal of analytic studies of the Japanese language done both inside and outside Japan, which will be surveyed in this course. Students will become familiar with the major issues through lectures and class discussions, as well as through their reading of both primary and secondary sources. Both formal and functional approaches to the analysis of Japanese will be examined, and the acquisition of these structures will also be discussed. The course will also be useful for the improvement of students' Japanese language proficiency. Recommended preparation: JAPN 101 and JAPN 102, or equivalent competence in Japanese. Offered as COGS 335, COGS 435, JAPN 435, LING 335 and LING 435. Counts for CAS Global & Cultural Diversity Requirement.

JAPN 337. Love and Loss: Reading The Tale of Genji. 3 Units.

Murasaki Shikibu's *The Tale of Genji* (c. 1000 CE), the great Japanese classic often referred to as "the world's first novel," has been praised by countless readers and scholars since it was first circulated within the imperial court. In this course we will read the entire text in English translation. We will focus on themes of love and loss, paying special attention to the substitution that results from the hero, the shining prince Genji, losing his mother at a tender age and attempting to fill the void she left. Since Genji is popularly thought of as a "playboy," we will investigate the thematic, historic, political, social, and religious descriptions within Genji's (many) love affairs, with a special emphasis on issues of gender. We will also consider the poetry, imagery, costume, music, religion, theater, and material culture of the mid-Heian era, which is encapsulated in the tale. Students will prepare individual research projects and be responsible for finding and presenting primary sources and secondary research. The instructor will provide background information on political, cultural, and religious history as well as present on details of literary theory. The aim is to encourage students to critically analyze the modern perception of the past. Class sessions will combine lectures, discussion, and audio-visual materials. All material is in English translation. There are no prerequisites. The course is conducted in English. Offered as JAPN 337 and WLIT 337.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement. 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 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 and WLIT 355. Counts as SAGES Departmental Seminar. Counts for CAS Global & Cultural Diversity Requirement.

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 Units.

Directed study for students who have progressed beyond available course offerings.

JAPN 435. Japanese Linguistics. 3 Units.

The purpose of this course is to survey the principal research in Japanese linguistics for students who have basic knowledge of Japanese and are interested in more in-depth treatment of linguistic phenomena (phonetics, phonology, morphology, syntax, semantics, etc.). Lectures and discussions will cover many different aspects of the Japanese language.

There is a great deal of analytic studies of the Japanese language done both inside and outside Japan, which will be surveyed in this course. Students will become familiar with the major issues through lectures and class discussions, as well as through their reading of both primary and secondary sources. Both formal and functional approaches to the analysis of Japanese will be examined, and the acquisition of these structures will also be discussed. The course will also be useful for the improvement of students' Japanese language proficiency. Recommended preparation: JAPN 101 and JAPN 102, or equivalent competence in Japanese. Offered as COGS 335, COGS 435, JAPN 435, LING 335 and LING 435. Counts for CAS Global & Cultural Diversity Requirement.

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

Mather House 215

<https://artsci.case.edu/judaic-studies/>

Phone: 216.368.5156

Jay Geller, Program Director
jay.geller@case.edu

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.

Program Faculty

Jay Geller, PhD
(Yale University)
Samuel Rosenthal Professor of Judaic Studies; Professor, Department of History; Director, Program in Judaic Studies
Modern European Jewish history

Alanna Cooper, PhD
(Boston University)
Abba Hillel Silver Chair of Jewish Studies; Visiting Assistant Professor, Department of Religious Studies
Anthropology, material culture, Jews of Muslim lands, the American Jewish community

Judith Neulander, PhD
(Indiana University)
Lecturer, Department of Religious Studies
Folklore, popular culture, crypto-Jews

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.

A. Introduction to Judaic Studies. One of the following two courses:
3

JDST 101	Jews and Judaism	3
JDST 173	Introducing Judaism	3

B. Nine additional credit hours of courses that have a JDST cross-listing.
9

Alternatively, students may take 6 credit hours of JDST courses, plus 3 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 379	Introduction to Middle East Politics

C. Two semesters of Hebrew (HBRW 101 and HBRW 102)
8

Students who place out of the 100-level HBRW courses must take an additional course from B above.

Total Units:

20

Courses

JDST 101. Jews and Judaism. 3 Units.

This course provides an introduction to Jewish religion, culture, history, and life. It does not presuppose any previous study of Judaism or experience with Judaism, and it prepares students for additional coursework in Judaic studies, Jewish history, or religious studies with an emphasis on Judaism. Required for the minor in Judaic Studies. Offered as JDST 101 and RLGN 213. Counts for CAS Global & Cultural Diversity Requirement.

JDST 173. Introducing Judaism. 3 Units.

This "topics" course offers an introduction to the academic study of Judaism. Whether approached through a particular theme or as a general historical introduction, each section of this course provides students with a general introduction to the academic study of religion and basic religious literacy in Jewish religious tradition, exploring forms of it in a diversity of cultural contexts around the world. Section topics could include, but are not limited to: Festivals and Holy Days, Women and Gender, Jewish Ethics. Students may repeat the course for credit (up to 6 credits), provided that the two sections are different. Offered as RLGN 173 and JDST 173. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

JDST 228. The Jewish Image in Popular Film. 3 Units.

This course will explore film as social practice from the flickering silent era, through Hollywood's Golden Age, to the techno-dazzle of today. Standing at the confluence of society, history, ideology and culture, students will come to understand how popular film is shaped by, and how it actively shapes, the constant reconstruction of Jewish identity in the American mainstream. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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 RLG 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 RLG 326 Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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, RLG 350, and RLG 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 RLG 371. Counts as SAGES Departmental Seminar. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

JDST 392. Independent Study. 1 - 3 Units.

Up to three semester hours of independent study may be taken in a single semester.

Department of Mathematics, Applied Mathematics, and Statistics

231 Yost Hall

<http://mathstats.case.edu/>

Phone: 216.368.2880; Fax: 216.368.5163

Stanislaw J. Szarek, Interim Chair

stanislaw.szarek@case.edu

The Department of Mathematics, Applied Mathematics, and Statistics at Case Western Reserve University is an active center for mathematical and statistical 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, statistics, 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 or 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 of Science in this department or another department in five years; there is a similar integrated bachelor's/master's degree program in statistics. The department, in cooperation with the college's Teacher Licensure Program, offers a course of study 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, individuals with degrees in mathematics enjoy excellent employment prospects and career opportunities. A bachelor's degree in mathematics or applied mathematics provides a strong background for graduate school in many areas (including computer science, medicine, and law, in addition to mathematics and science) or for 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 private-sector employment 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, both 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, data analysis, and modeling methodology, and 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, participate in research, and engage in other activities. In addition,

undergraduates can obtain teaching experience through the department's supplemental instruction program.

Department Faculty

Stanislaw J. Szarek, PhD
(Mathematical Institute, Polish Academy of Science)
Kerr Professor of Mathematics and Interim Chair
Analysis and applied analysis; convex and differential geometry; mathematical physical;

Alethea Barbaro, PhD
(University of California, Santa Barbara)
Associate Professor
Continuum and fluid mechanics; dynamical systems; life sciences and biomedical research

Jenny Brynjarsdóttir, PhD
(The Ohio State University)
Associate Professor
Bayesian statistics; spatial statistics; uncertainty quantification

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
Imaging and inverse problems; numerical analysis and scientific computing; uncertainty quantification

Julia Dobrosotskaya, PhD
(University of California, Los Angeles)
Assistant Professor
Analysis and applied analysis; imaging and inverse problems; numerical analysis and scientific computing

Weihong Guo, PhD
(University of Florida)
Associate Professor
Imaging and inverse problems; numerical analysis and scientific computing

David Gurarie, PhD
(Hebrew University, Jerusalem, Israel)
Professor
Continuum and fluid mechanics; dynamical systems; life sciences and biomedical research

Nicholas Gurski, PhD
(University of Chicago)
Assistant Professor
Algebra

Mary Ann Horn, PhD
(University of Virginia)
Professor
Analysis and applied analysis; dynamical systems; life sciences/ biomedical research

Michael Hurley, PhD
(Northwestern University)
Professor
Dynamical systems

Steven H. Izen, PhD
(Massachusetts Institute of Technology)
Professor
Imaging and inverse problems; numerical analysis and scientific computing

Joel Langer, PhD
(University of California, Santa Cruz)
Professor and Theodore M. Focke Professorial Fellow
Convex and differential geometry

Marshall J. Leitman, PhD
(Brown University)
Professor
Probability and stochastic processes

Elizabeth Meckes, PhD
(Stanford University)
Professor
Analysis and applied analysis; probability and stochastic processes

Mark Meckes, PhD
(Case Western Reserve University)
Professor
Analysis and applied analysis; probability and stochastic processes

Anirban Mondal, PhD
(Texas A&M University)
Assistant Professor
Bayesian statistics; spatial statistics; uncertainty quantification

David A. Singer, PhD
(University of Pennsylvania)
Professor
Convex and differential geometry; dynamical systems

Erkki Somersalo, PhD
(University of Helsinki)
Professor
Imaging and inverse problems; life sciences and biomedical research; uncertainty quantification

Wanda Strychalski, PhD
(University of North Carolina at Chapel Hill)
Assistant Professor
Life sciences and biomedical research; continuum and fluid mechanics; numerical analysis and scientific computing

Peter Thomas, PhD
(University of Chicago)
Professor
Dynamical systems; life sciences and biomedical research; probability and stochastic processes

Elisabeth Werner, PhD
(Université Pierre et Marie Curie, Paris VI)
Professor
Analysis and applied analysis; convex and differential geometry; probability and stochastic processes

Patricia Williamson, PhD
(Bowling Green State University)
Senior Instructor
Bayesian statistics

Wojbor A. Woyczynski, PhD
(Wroclaw University, Poland)
Professor and Director of the Center for Stochastic and Chaotic Processes in Science and Technology
Continuum and fluid mechanics; mathematical physics; probability and stochastic processes

Longhua Zhao, PhD
(The University of North Carolina at Chapel Hill)
Associate Professor
Continuum and fluid mechanics; life sciences and biomedical research; numerical analysis and 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

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	
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	
Three approved technical electives *		9
ENGR 131	Elementary Computer Programming **	3
or MATH 330	Introduction of Scientific Computing	
Total Units		41

* No more than one can be from outside the department.

** Or other approved computer science course.

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 36 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. 369) 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	
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:		
CHEM 105 & CHEM 106	Principles of Chemistry I and Principles of Chemistry II	6
CHEM 111 & ENGR 145	Principles of Chemistry for Engineers and Chemistry of Materials	
EEPS 110 & EEPS 115 or EEPS 210	Physical Geology and Introduction to Oceanography Earth History: Time, Tectonics, Climate, and Life	
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	
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:		
MATH 324	Introduction to Complex Analysis	
MATH 425	Complex Analysis I	
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:		
CHEM 105 & CHEM 106	Principles of Chemistry I and Principles of Chemistry II	6-8
CHEM 111 & ENGR 145	Principles of Chemistry for Engineers and Chemistry of Materials	
EEPS 110 & EEPS 115 or EEPS 210	Physical Geology and Introduction to Oceanography Earth History: Time, Tectonics, Climate, and Life	
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 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 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	
PHYS 472	Graduate Physics Laboratory	
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		82-85

* If approved by the M&P committee, other science sequence courses may be substituted.

In addition to the major course work 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	Units	
	Fall	Spring
General Physics I - Mechanics (PHYS 121) or Physics and Frontiers I - Mechanics (PHYS 123)	4	
Calculus for Science and Engineering I (MATH 121)	4	
Elementary Computer Programming (ENGR 131)	3	
Principles of Chemistry I (CHEM 105) or Principles of Chemistry for Engineers (CHEM 111)	3-4	
SAGES First Seminar	4	
Principles of Chemistry Laboratory (CHEM 113)	2	
General Physics II - Electricity and Magnetism (PHYS 122) or Physics and Frontiers II - Electricity and Magnetism (PHYS 124)		4
Calculus for Science and Engineering II (MATH 122) or Calculus II (MATH 124)		4
Principles of Chemistry II (CHEM 106) or Chemistry of Materials (ENGR 145)		3-4
Principles of Chemistry Laboratory (CHEM 113)		2
Other non-major course **		3
Year Total:	20-21	16-17

Second Year	Units	
	Fall	Spring
Introduction to Modern Physics (PHYS 221)	3	

Calculus for Science and Engineering III (MATH 223) or Calculus III (MATH 227)	3	
Linear Algebra (MATH 307)	3	
Non-major courses **	9	
Classical Mechanics (PHYS 310)		3
MP Group I *		3
Elementary Differential Equations (MATH 224) or Differential Equations (MATH 228)		3
Introduction to Abstract Algebra (MATH 308) or Introduction of Scientific Computing (MATH 330)		3
Year Total:	18	12

Third Year

	Units	
	Fall	Spring
Thermodynamics and Statistical Mechanics (PHYS 313)	3	
Introduction to Quantum Mechanics I (PHYS 331) or Quantum Mechanics I (PHYS 481)	3	
Fundamentals of Analysis I (MATH 321)	3	
MP Group II *	3	
Non-major courses **	9	
Introduction to Quantum Mechanics II (PHYS 332) or Quantum Mechanics II (PHYS 482)		3
Fundamentals of Analysis II (MATH 322)		3
Introduction to Complex Analysis (MATH 324)		3
MP Group III *		3
Year Total:	21	12

Fourth Year

	Units	
	Fall	Spring
PHYS 3XX***	3	
Graduate Physics Laboratory (PHYS 472)	3	
MP Group IV *	3	
SAGES Departmental Seminar ****	3	
Classical Electromagnetism (PHYS 423)		3
Senior Project ****		3-4
Non-major courses **		12
Year Total:	12	18-19

Total Units in Sequence: 129-132

* The "M&P group" of four courses corresponds to two physics courses and two mathematics courses. The physics courses would be chosen from PHYS 250, PHYS 349, and PHYS 350. The mathematics courses are subject to approval by the advisory committee and are thereby referred to as 'approved electives.' They may be chosen from the general list of mathematics courses at the 300 level or higher. Also subject to approval, students may choose a course from outside the mathematics and physics departments as a substitute in the M&P group.

** The number of open electives will vary depending on whether students choose 3-credit or 4-credit courses to fulfill other requirements (chemistry, senior project)

*** 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 326 Physical Optics, PHYS 327 Laser Physics, PHYS 328 Cosmology and the Structure of the Universe, PHYS 336 Modern Cosmology, PHYS 365 General Relativity.

**** The Senior Project and SAGES Departmental Seminar should either be the Mathematics option (MATH 351 Senior Project for the Mathematics and Physics Program and a Mathematics departmental seminar), or the Physics option (PHYS 351 Senior Physics Project, and PHYS 352 Senior Physics Project Seminar).

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 18 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 or MATH 124	Calculus for Science and Engineering II Calculus II	4
MATH 223 or MATH 227	Calculus for Science and Engineering III Calculus III	3
MATH 224 or MATH 228	Elementary Differential Equations Differential Equations	3
MATH 201	Introduction to Linear Algebra for Applications	3
Two computation classes		6
ENGR 131	Elementary Computer Programming	

An additional higher-numbered course in computation. Recommended courses include MATH 330, various EECS offerings, and PQHS 414. Consult your advisor for other suggestions.		
STAT 325	Data Analysis and Linear Models	3
STAT 326	Multivariate Analysis and Data Mining	3
STAT 345	Theoretical Statistics I	3
STAT 346	Theoretical Statistics II	3
At least 15 hours of courses in statistical methodology, to be chosen from courses numbered 300 and higher offered by the Statistics department, or approved courses in statistical methodology or portability taught in biosatistics, electrical engineering, and computer science, economics, mathematics, operations research, systems engineering, etc. At least 9 hours must be in STAT. STAT 243 and STAT 244 may be counted.		15
Two approved courses (or more) numbered 300 or above in an approved discipline outside statistics.		6
Total Units		56

A student in this program has the option of a concentration in Actuarial Science, described below.

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 or MATH 124	Calculus for Science and Engineering II Calculus II	4
MATH 223 or MATH 227	Calculus for Science and Engineering III Calculus III	3
MATH 224 or MATH 228	Elementary Differential Equations Differential Equations	3
MATH 201	Introduction to Linear Algebra for Applications	3
Two computation classes		6
ENGR 131	Elementary Computer Programming	
An additional higher-numbered course in computation. Recommended courses include MATH 330, various EECS offerings, and PQHS 414. Consult your advisor for other suggestions.		
STAT 325	Data Analysis and Linear Models	3
STAT 326	Multivariate Analysis and Data Mining	3
STAT 345	Theoretical Statistics I	3
STAT 346	Theoretical Statistics II	3

At least 15 hours of courses in statistical methodology, to be chosen from courses numbered 300 and higher offered by the Statistics department, or approved courses in statistical methodology or probability taught in biostatistics, electrical engineering and computer science, economics, mathematics, operations research, systems engineering, etc. At least 9 house must be in STAT. STAT 243 and STAT 244 may be counted.

Two approved courses (or more) numbered 300 or above in an approved discipline outside statistics. 6

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: 12

PHYS 121 & PHYS 122	General Physics I - Mechanics and General Physics II - Electricity and Magnetism
CHEM 105 & CHEM 106 & CHEM 113	Principles of Chemistry I and Principles of Chemistry II and Principles of Chemistry Laboratory

Students are strongly encouraged to include advanced expository or technical writing courses in their programs.

Total Units 68

A student in this program has the option of a concentration in Actuarial Science, described below.

Actuarial Science

A student in either the BA or the BS program in statistics may opt for a concentration in Actuarial Science, the requirements of which exceed the basic major requirements. The basic major requirement of 15 hours in statistical methodology is increased to 18 hours, and these must include STAT 317, 318, and at least six additional hours of approved STAT courses. A student finishing this concentration will have completed at least 30 hours in statistics. Students in this concentration should consult with their advisors before choosing these courses, and for information about additional non-required courses that might be useful for actuarial science.

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 MS 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 credit hours including at least 4 STAT courses numbered 400 or higher) to be chosen from STAT 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:

MATH 121	Calculus for Science and Engineering I
or MATH 125	Math and Calculus Applications for Life, Managerial, and Social Sci I
MATH 122	Calculus for Science and Engineering II
or MATH 124	Calculus II
or MATH 126	Math and Calculus Applications for Life, Managerial, and Social Sci II
MATH 223	Calculus for Science and Engineering III
or MATH 227	Calculus III
MATH 224	Elementary Differential Equations
or MATH 228	Differential Equations
MATH 150	Mathematics from a Mathematician's Perspective *
MATH 201	Introduction to Linear Algebra for Applications
or MATH 307	Linear Algebra
MATH 301	Undergraduate Reading Course
MATH 302	Departmental Seminar
MATH 303	Elementary Number Theory
MATH 304	Discrete Mathematics
MATH 308	Introduction to Abstract Algebra
MATH 321	Fundamentals of Analysis I
MATH 322	Fundamentals of Analysis II
MATH 324	Introduction to Complex Analysis
MATH 327	Convexity and Optimization
MATH 330	Introduction of Scientific Computing
MATH 333	Mathematics and Brain
MATH 338	Introduction to Dynamical Systems
MATH 343	Theoretical Computer Science
MATH 363	Knot Theory
MATH 380	Introduction to Probability
Or any 400-level MATH course	

* 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 credit hours of approved course work. The minor must satisfy the requirements below and must include a minimum of 12 credit hours in STAT courses.

One of the following sequences:

STAT 243 & STAT 244	Statistical Theory with Application I and Statistical Theory with Application II
STAT 345 & STAT 346	Theoretical Statistics I and Theoretical Statistics II
Or other approved sequence	

One of the following:	3
STAT 312 Basic Statistics for Engineering and Science	
STAT 313 Statistics for Experimenters	
STAT 332 Statistics for Signal Processing	
STAT 333 Uncertainty in Engineering and Science	
STAT 325 Data Analysis and Linear Models	
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 30 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. The 30 credit hours required for graduation must include 6 credits each from two of the following three basic areas:

Abstract Algebra	6
MATH 401 Abstract Algebra I	
MATH 402 Abstract Algebra II	
Analysis	6
MATH 423 Introduction to Real Analysis I	
MATH 424 Introduction to Real Analysis II	
MATH 425 Complex Analysis I	
Geometry and Topology	6
MATH 461 Introduction to Topology	
MATH 462 Algebraic Topology	
MATH 465 Differential Geometry	
MATH 467 Differentiable Manifolds	

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 30 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 of courses designated MATH
- At least 6 hours of courses not designated MATH
- 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:

MATH 471	Advanced Engineering Mathematics*
MATH 423	Introduction to Real Analysis I
MATH 405	Advanced Matrix Analysis

Probability and its Applications:

MATH 439	Bayesian Scientific Computing
MATH 491	Probability I

Numerical Analysis and Scientific Computing:

MATH 431	Introduction to Numerical Analysis I
MATH 432	Numerical Differential Equations
MATH 433	Numerical Solutions of Nonlinear Systems and Optimization

Differential Equations:

MATH 435	Ordinary Differential Equations
MATH 445	Introduction to Partial Differential Equations
MATH 449	Dynamical Models for Biology and Medicine

Inverse Problems and Imaging:

MATH 439	Bayesian Scientific Computing
MATH 440	Computational Inverse Problems
MATH 475	Mathematics of Imaging in Industry and Medicine

Logic and Discrete Mathematics:

MATH 406	Mathematical Logic and Model Theory
MATH 408	Introduction to Cryptology

Life Science:

MATH 441	Mathematical Modeling
----------	-----------------------

MATH 449	Dynamical Models for Biology and Medicine	
MATH 478	Computational Neuroscience	

* Not suitable for credit towards the PhD requirements.

Other suitable courses for students in applied mathematics include:

MATH 424	Introduction to Real Analysis II	3
MATH 425	Complex Analysis I	3
MATH 427	Convexity and Optimization	3
MATH 444	Mathematics of Data Mining and Pattern Recognition	3
MATH 475	Mathematics of Imaging in Industry and Medicine	3
MATH 492	Probability II	3

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 May. Students may attempt each exam up to two 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. Once the syllabus and exam date have been reported to the graduate committee, the student will advance to PhD candidacy.

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.

The course requirements are:

Abstract Algebra:		6
MATH 401	Abstract Algebra I	
MATH 402	Abstract Algebra II	
Analysis:		9
MATH 423	Introduction to Real Analysis I	
MATH 424	Introduction to Real Analysis II	
MATH 425	Complex Analysis I	
Geometry and topology; one of:		3

MATH 461	Introduction to Topology	
MATH 462	Algebraic Topology	
MATH 465	Differential Geometry	
MATH 467	Differentiable Manifolds	
18 credit hours of approved course work		18
Total Units		36

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.

MATH 431	Introduction to Numerical Analysis I	3
One of the following:		3
MATH 432	Numerical Differential Equations	
MATH 433	Numerical Solutions of Nonlinear Systems and Optimization	
MATH 441	Mathematical Modeling	
One of the following:		3
MATH 435	Ordinary Differential Equations	
MATH 445	Introduction to Partial Differential Equations	
24 hours of approved courses *		24
Total Units		33

* Must include at least 9 hours of courses designated MATH and at least 9 credit hours **not** designated MATH.

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

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	Bayesian Scientific Computing	3
or MATH 440	Computational Inverse Problems	
MATH 441	Mathematical Modeling	3
MATH 445	Introduction to Partial Differential Equations	3
MATH 449	Dynamical Models for Biology and Medicine	3
or MATH 478	Computational Neuroscience	
Application area		9

Imaging 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	Bayesian Scientific Computing	3
or MATH 440	Computational Inverse Problems	
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	Bayesian Scientific Computing	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		9

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		9

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 30 hours of approved course work in statistics and related disciplines and an MS research project (plan B) or a thesis (plan A). 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:

Plan A

STAT 425 & STAT 426	Data Analysis and Linear Models and Multivariate Analysis and Data Mining	6
STAT 445 & STAT 446	Theoretical Statistics I and Theoretical Statistics II	6
STAT 455	Linear Models	3
STAT 495A	Consulting Forum	3
or Approved Elective		
STAT 651	Thesis M.S.	6
A minimum of six hours of approved graduate-level statistics electives.		6
Total Units		30

Plan B

STAT 425 & STAT 426	Data Analysis and Linear Models and Multivariate Analysis and Data Mining	6
STAT 445 & STAT 446	Theoretical Statistics I and Theoretical Statistics II	6
STAT 455	Linear Models	3
STAT 495A	Consulting Forum ()	3
or Approved Elective		

STAT 621	M.S. Research Project (Plan B)	3
A minimum of nine hours of approved graduate-level statistics electives.		9
Total Units		30

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 30 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.

MATH Courses

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. Prereq: MATH 120 or a score of 30 on the mathematics diagnostic test or exempt from the mathematics diagnostic test.

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 3 1/2 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. Prereq: MATH 120 or a score of 30 on the mathematics diagnostic test or exempt from the mathematics diagnostic test.

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 for Applications. 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. Appropriate for majors in science, engineering, economics. 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 228. Differential Equations. 3 Units.

Elementary ordinary differential equations: first order equations; linear systems; applications; 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 227 or placement by the department.

MATH 301. Undergraduate Reading Course. 1 - 3 Units.

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 CSDS 302, ECSE 302 and MATH 304. Prereq: MATH 122 or 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, ECSE 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.

Properties, singularities, and representations of analytic functions, complex integration. Cauchy's theorems, series residues, conformal mapping and analytic continuation. Riemann surfaces. Relevance to the theory of physical problems. Prereq: MATH 224 or MATH 228.

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: MATH 224 or MATH 228.

MATH 332. Equations that Changed the World. 3 Units.

This course will introduce students to some of the fundamental equations that changed the worlds. One equation a week, the students will investigate the mathematics behind some of the most influential equations or ideas, e.g., the Fourier Transform, Maxwell's equations, Schrödinger's equation and the wave equation. Students will research the scientific and social climate in which the equations emerged, and report the impact that the equations have had on the way we see the world and live our lives today. The class will alternate between lectures, where the instructor introduce the mathematical background needed to state and understand for the equation, and presentations, in which the students will present the results of their investigations. The students will be required to write a term paper related to a particular equation and to give a final presentation. The grading will address both the mathematical maturity of the students and the organization and presentation of the paper. Counts as SAGES Departmental Seminar. Prereq: (MATH 223 or MATH 227) and (MATH 224 or 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. Offered as CSDS 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 Capstone Project. Students pursue theoretical, experimental, or teaching research under the supervision of a Capstone Advisor—ordinarily a member of the MAMS Department faculty. Results and conclusions of the project are summarized in written form and in a public presentation, e.g., in the annual MAMS Capstone Symposium, or in the CWRU Intersections Symposium and Poster Sessions. In order to register, a student must first obtain the consent of a Capstone Advisor. Students are strongly encouraged to begin well in advance of registration to initiate discussions with a potential Capstone Advisor. Before granting approval, an advisor may require a Capstone Proposal outlining the goals, expected background, methodology and time frame of the project. The determination as to whether the expectations for the Capstone Project and for the SAGES Capstone Requirement have been met are the sole responsibility of the Capstone Advisor. 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, isometrics 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, robotics, cryptology and coding theory. The contents of the course may vary from one semester to another, and may include, for example: the classical theory of algebraic curves in the setting of affine and projective planes over the real or complex fields; affine and projective equivalence; invariants; tangents; singularities; intersection multiplicities; resultants and Bezout's Theorem; linear systems; rational curves; flexes and group structure on a cubic. Prereq: MATH 307 and Coreq: MATH 308.

MATH 376. Mathematical Analysis of Biological Models. 3 Units.

This course focuses on the mathematical methods used to analyze biological models, with examples drawn largely from ecology but also from epidemiology, developmental biology, and other areas. Mathematical topics include equilibrium and stability in discrete and continuous time, some aspects of transient dynamics, and reaction-diffusion equations (steady state, diffusive instabilities, and traveling waves). Biological topics include several "classic" models, such as the Lotka-Volterra model, the Ricker model, and Michaelis-Menten/type II/saturating responses. The emphasis is on approximations that lead to analytic solutions, not numerical analysis. An important aspect of this course is translating between verbal and mathematical descriptions: the goal is not just to solve mathematical problems but to extract biological meaning from the answers we find. 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, CSDS 478, EBME 478, ECSE 478, MATH 478 and NEUR 478.

MATH 380. Introduction to Probability. 3 Units.

Combinatorial analysis. Permutations and combinations. Axioms of probability. Sample space and events. Equally likely outcomes. Conditional probability. Bayes' formula. Independent events and trials. Discrete random variables, probability mass functions. Expected value, variance. Bernoulli, binomial, Poisson, geometric, negative binomial random variables. Continuous random variables, density functions. Expected value and variance. Uniform, normal, exponential, Gamma random variables. The De Moivre-Laplace limit theorem. Joint probability mass functions and densities. Independent random variables and the distribution of their sums. Covariance. Conditional expectations and distributions (discrete case). Moment generating functions. Law of large numbers. Central limit theorem. Additional topics (time permitting): the Poisson process, finite state space Markov chains, entropy. Prereq: MATH 223 or MATH 227.

MATH 382. High Dimensional Probability. 3 Units.

Behavior of random vectors, random matrices, and random projections in high dimensional spaces, with a view toward applications to data sciences. Topics include tail inequalities for sums of independent random variables, norms of random matrices, concentration of measure, and bounds for random processes. Applications may include structure of random graphs, community detection, covariance estimation and clustering, randomized dimension reduction, empirical processes, statistical learning, and sparse recovery problems. Additional work is required for graduate students. Offered as MATH 382, MATH 482, STAT 382 and STAT 482. Prereq: MATH 307 and (MATH 380 or STAT 345 or STAT 445).

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, CSDS 394, ECSE 394, MATH 494, CSDS 494 and ECSE 494. Prereq: MATH 223 and MATH 380 or requisites not met permission.

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, ECSE 319, MATH 319, SYBB 319, BIOL 419, EBME 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, 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 or MATH 421.

MATH 423. Introduction to Real Analysis I. 3 Units.

General theory of measure and integration. Measures and outer measures. Lebesgue measure on n -space. Integration. Convergence theorems. Product measures and Fubini's theorem. Signed measures. Hahn-Jordan decomposition, Radon-Nikodym theorem, and Lebesgue decomposition. SpaceP-integrable function. Lebesgue differentiation theorem in n -space. Prereq: MATH 322 or MATH 422.

MATH 424. Introduction to Real Analysis II. 3 Units.

Measures on locally compact spaces. Riesz representation theorem. Elements of functional analysis. Normed linear spaces. Hahn-Banach, Banach-Steinhaus, open mapping, closed graph theorems. Weak topologies. Banach-Alaoglu theorem. Function spaces. Stone-Weierstrass and Ascoli theorems. Basic Hilbert space theory. Application to Fourier series. Additional topics: Haar measure on locally compact groups. Prereq: MATH 423.

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 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 431. Introduction to Numerical Analysis I. 3 Units.

Numerical linear algebra for scientists and engineers. Matrix and vector norms, computer arithmetic, conditioning and stability, orthogonality. Least squares problems: QR factorization, normal equations and Singular Value Decomposition. Direct solution of linear system: Gaussian elimination and Cholesky factorization. Eigenvalues and eigenvectors: the QR algorithm, Rayleigh quotient, inverse iteration. Introduction to iterative methods. Students will be introduced to MATLAB. Prereq: MATH 201 or MATH 307.

MATH 432. Numerical Differential Equations. 3 Units.

Numerical solution of differential equations for scientists and engineers. Solution of ordinary differential equations by multistep and single step methods. Stability, consistency, and convergence. Stiff equations. Finite difference schemes. Introduction to the finite element method. Introduction to multigrid techniques. The diffusion equation: numerical schemes and stability analysis. Introduction to hyperbolic equations. MATLAB will be used in this course. Prereq: MATH 224 or MATH 228.

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.

Fundamentals of dynamic optimization with applications to control. Variational treatment of control problems and the Maximum Principle. Structures of optimal systems; regulators, terminal controllers, time-optimal controllers. Sufficient conditions for optimality. Singular controls. Computational aspects. Selected applications. Recommended preparation: EECS/ECSE 408. Offered as ECSE 421 and MATH 434.

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, Poincaré-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. Bayesian Scientific Computing. 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 307 and MATH 224 or MATH 228.

MATH 446. Numerical Methods for Partial Differential Equations. 3 Units.

This course is an introduction to numerical methods of PDEs, and in particular, to finite element methods (FEM), emphasizing the interconnection between the functional analytic viewpoint of PDEs and the practical and effective computation of the numerical approximations. In particular, the emphasis is on showing that many of the useful and elegant ideas in finite dimensional linear algebra have a natural counterpart in the infinite dimensional setting of Hilbert spaces, and that the same techniques that guarantee the existence and uniqueness of the solutions in fact provide also stable computational methods to approximate the solutions. The topics covered in this course include Fourier analysis, weak derivatives, weak forms, generalized functions; Sobolev spaces, trace theorem, compact embedding theorems, Poincaré inequalities; Riesz theory, Fredholm theory; Finite Element Method (FEM): Grid generation, existence, stability and convergence of solutions for elliptic problems; Semi-discretization of parabolic and hyperbolic equations; Stiffness; Numerical solution of linear systems by iterative methods. A quintessential part of this course comprises numerical implementation of the finite element method. Matlab is used as the programming tool both in demonstrations and examples in the class as well as in home assignments. Recommended Preparation: linear algebra, multivariate calculus, and ordinary differential equations.

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.

Metric spaces, topological spaces, and continuous functions. Compactness, connectedness, path connectedness. Topological manifolds; topological groups. Polyhedra, simplicial complexes. Fundamental groups. Prereq: MATH 224 or MATH 228.

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.

Vector analysis, Fourier series and integrals. Laplace transforms, separable partial differential equations, and boundary value problems. Bessel and Legendre functions. Emphasis on techniques and applications. Prereq: MATH 224 or MATH 228.

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, CSDS 478, EBME 478, ECSE 478, MATH 478 and NEUR 478.

MATH 482. High Dimensional Probability. 3 Units.

Behavior of random vectors, random matrices, and random projections in high dimensional spaces, with a view toward applications to data sciences. Topics include tail inequalities for sums of independent random variables, norms of random matrices, concentration of measure, and bounds for random processes. Applications may include structure of random graphs, community detection, covariance estimation and clustering, randomized dimension reduction, empirical processes, statistical learning, and sparse recovery problems. Additional work is required for graduate students. Offered as MATH 382, MATH 482, STAT 382 and STAT 482. Prereq: MATH 307 and (MATH 380 or STAT 345 or STAT 445).

MATH 491. Probability I. 3 Units.

Probabilistic concepts. Discrete probability, elementary distributions. Measure theoretic framework of probability theory. Probability spaces, sigma algebras, expectations, distributions. Independence. Classical results on almost sure convergence of sums of independent random variables. Kolmogorov's law of large numbers. Recurrence of sums. Weak convergence of probability measures. Inversion, Levy's continuity theorem. Central limit theorem. Introduction to the central limit problem. Prereq: MATH 322.

MATH 492. Probability II. 3 Units.

Conditional expectations. Discrete parameter martingales. Stopping times, optional stopping. Discrete parameter stationary processes and ergodic theory. Discrete time Markov processes. Introduction to continuous parameter stochastic processes. Kolmogorov's consistency theorem. Gaussian processes. Brownian motion theory (sample path properties, strong Markov property, Martingales associated to Brownian motion, functional central limit theorem). Prereq: MATH 491.

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, CSDS 394, ECSE 394, MATH 494, CSDS 494 and ECSE 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 312R 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 Units.

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 Units.

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 Units.

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 Units.

Presentation of individual research, discussion, and investigation of research papers in a specialized field of mathematics.

MATH 651. Thesis (M.S.). 1 - 18 Units.

(Credit as arranged.)

MATH 701. Dissertation (Ph.D.). 1 - 9 Units.

(Credit as arranged.) 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 or SYBB 201R. Offered as STAT 201R and SYBB 201R. Counts for CAS Quantitative Reasoning Requirement.

STAT 243. Statistical Theory with Application I. 3 Units.

Introduction to fundamental concepts of statistics through examples including design of an observational study, industrial simulation. Theoretical development motivated by sample survey methodology. Randomness, distribution functions, conditional probabilities. Derivation of common discrete distributions. Expectation operator. Statistics as random variables, point and interval estimation. Maximum likelihood estimators. Properties of estimators. Prereq: MATH 122 or MATH 126.

STAT 244. Statistical Theory with Application II. 3 Units.

Extension of inferences to continuous-valued random variables. Common continuous-valued distributions. Expectation operator. Maximum likelihood estimators for the continuous case. Simple linear, multiple and polynomial regression. Properties of regression estimators when errors are Gaussian. Regression diagnostics. Class or student projects gathering real data or generating simulated data, fitting models and analyzing residuals from fit. Prereq: STAT 243.

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, 312R, 313; SYBB 312R. 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, STAT 312R, STAT 313 or SYBB 312R. Offered as STAT 312R and SYBB 312R. 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, 312R, 313; SYBB 312R. 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 312R 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 243 or STAT 312 or STAT 312R or PQHS/EPBI 431 or PQHS/EPBI 441 or PQHS/EPBI 458.

STAT 326. Multivariate Analysis and Data Mining. 3 Units.

Extensions of exploratory data analysis and modeling to multivariate response observations and to non-Gaussian data. Singular value decomposition and projection, principal components, factor analysis and latent structure analysis, discriminant analysis and clustering techniques, cross-validation, E-M algorithm, CART. Introduction to generalized linear modeling. Case studies of complex data sets with multiple objectives for analysis. Recommended preparation: STAT 325/425. Offered as STAT 326 and STAT 426.

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. 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 PQHS 481. Prereq: MATH 122 or MATH 223 or Coreq: PQHS/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 PQHS 482. Prereq: STAT 345 or STAT 445 or PQHS/EPBI 481.

STAT 382. High Dimensional Probability. 3 Units.

Behavior of random vectors, random matrices, and random projections in high dimensional spaces, with a view toward applications to data sciences. Topics include tail inequalities for sums of independent random variables, norms of random matrices, concentration of measure, and bounds for random processes. Applications may include structure of random graphs, community detection, covariance estimation and clustering, randomized dimension reduction, empirical processes, statistical learning, and sparse recovery problems. Additional work is required for graduate students. Offered as MATH 382, MATH 482, STAT 382 and STAT 482. Prereq: MATH 307 and (MATH 380 or STAT 345 or STAT 445).

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 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 312R 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.

Extensions of exploratory data analysis and modeling to multivariate response observations and to non-Gaussian data. Singular value decomposition and projection, principal components, factor analysis and latent structure analysis, discriminant analysis and clustering techniques, cross-validation, E-M algorithm, CART. Introduction to generalized linear modeling. Case studies of complex data sets with multiple objectives for analysis. Recommended preparation: STAT 325/425. Offered as STAT 326 and STAT 426.

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. 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. Bayesian Scientific Computing. 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 PQHS 481. Prereq: MATH 122 or MATH 223 or Coreq: PQHS/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 PQHS 482. Prereq: STAT 345 or STAT 445 or PQHS/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 482. High Dimensional Probability. 3 Units.

Behavior of random vectors, random matrices, and random projections in high dimensional spaces, with a view toward applications to data sciences. Topics include tail inequalities for sums of independent random variables, norms of random matrices, concentration of measure, and bounds for random processes. Applications may include structure of random graphs, community detection, covariance estimation and clustering, randomized dimension reduction, empirical processes, statistical learning, and sparse recovery problems. Additional work is required for graduate students. Offered as MATH 382, MATH 482, STAT 382 and STAT 482. Prereq: MATH 307 and (MATH 380 or STAT 345 or STAT 445).

STAT 491. Graduate Student Seminar. 1 - 2 Units.

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 Units.

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 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 Units.

Individual study and/or project work.

STAT 621. M.S. Research Project. 1 - 9 Units.

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 Units.

(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 Units.

(Credit as arranged.) Prereq: Predoctoral research consent or advanced to Ph.D. candidacy milestone.

Department of Modern Languages and Literatures

103 Guilford House
www.case.edu/artsci/dmll (<http://www.case.edu/artsci/dmll/>)
 Phone: 216.368.8976; Fax: 216.368.2216
 Damaris Punaes-Alpizar, Department Chair
dxp204@case.edu

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: three French programs ("The Paris Experience," "The Montreal Experience," and "Science and Technology in France"), one Spanish program ("The Cuba Experience"), one in Italy ("The Italian Experience"), and one Arabic program ("The Arab World Experience—Jordan") in addition to a Special Topics course in Italian and French that includes field work at the Slow Food biennial summit in Turin, Italy.

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. The French Section recently opened a French for Professional Skills Center, offering the possibility of additional French diplomas granted through the *Chambre de Commerce et d'Industrie de Paris* in the areas of Business, Medical French, and French for Diplomacy. Our Spanish section is actively putting in place additions to this Center which will enable students in Spanish the option of earning supplementary certificates and diplomas for health and business professionals.

Department Faculty

Damaris Punales-Alpizar, PhD
(University of Iowa)

Associate Professor and Chair

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

Christine M. Cano, PhD
(Yale University)

Associate Professor

20th- and 21st-century French literature and culture

Beth M. Carter, PhD
(University of Pennsylvania)

Assistant Professor

Pre-modern Japanese literature

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 Argentinian; 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

Cristián G. Gómez Olivares, PhD
(University of Iowa)

Associate Professor

20th century Latin American narrative and poetry

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 Ittner, 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

Cheryl Toman, PhD
(University of Illinois, Urbana-Champaign)

Ruth Mulhauser Professor

African and Middle Eastern Francophone literature; women's writing; immigrant communities in France

Susanne Veas-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)
Senior Instructor
19th- and 20th-century Russian literature; the poetry of Marina Tsvetaeva;
women writers; Russian culture; Russian folklore

Lecturers

Haydee Espino Castillo, MA
(Kent State University)
Lecturer (Spanish)

Man-Lih Chai, MA
(University of Illinois, Urbana-Champaign)
Lecturer (Chinese)

Elena Fernández, MA
(Cleveland State University)
Lecturer (Spanish)

Margaret M. Fitzgerald, MA
(Ohio State University)
Lecturer (Japanese)

Ramez Islambouli, MA
(Case Western Reserve University)
Lecturer (Arabic)

Yoshiko Kishi, MA
(New York University)
Lecturer (Japanese)

Clara Lipszyc-Arroyo, MA
(University of Western Ontario)
Lecturer (Portuguese and Spanish)

Enno Lohmeyer, PhD
(University of Kansas)
Lecturer (German)

Yukiko (Nishida) Onitsuka, EdD
(University of Cincinnati)
Lecturer (Japanese)

Alessandra Parry, MA
(University of Akron)
Lecturer (Spanish)

Fabienne Pizot-Haymore, MA
(Université Paul Valéry, Montpellier III)
Lecturer (French), Director and Manager of the French for Professional Skills Center

Charlotte Sanpere, PhD
(Université Sorbonne Nouvelle-Paris 3)
Lecturer (French)

Undergraduate Programs

The Department of Modern Languages and Literatures offers courses of study leading to the Bachelor of Arts in Chinese, French, German, Japanese Studies, and Spanish. In addition, the department offers minors in 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), work with members of our faculty to determine the correct placement. In general, one year of high school language instruction is the equivalent to one university-level course. Therefore, Spanish I in high school is the equivalent of Spanish 101 at CWRU. Students who have taken four years or more in one language in high school are generally eligible to take 300-level language courses at CWRU, but the department strongly recommends starting with a course under 350 to begin the advanced sequence.

Majors

Chinese, French, German, Japanese Studies, and Spanish

Majors in Chinese, 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 Chinese and 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 Chinese, 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 (<http://bulletin.case.edu/undergraduatestudies/gradprofessional/#accelerationtowardgraduatedegree>text), 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. 206).

Additional Information for Spanish Major

• *At least three of the 300-level courses should be numbered above 320.*

Spanish subject area requirements

SPAN 201	Intermediate Spanish I *	4
SPAN 202	Intermediate Spanish II *	4
SPAN 308	Advanced Spanish in Spain **	3
SPAN 310	Advanced Composition and Reading	3
SPAN 311	Advanced Spanish Conversation	3
SPAN 314	Practice of Translation	3
SPAN 315	Latin American Cultural Conflicts **	3
SPAN 317	Contemporary Latin American Culture	3
SPAN 318	Contemporary Spanish Culture	3
SPAN 319	Spanish for Legal Professionals	3
SPAN 320	Introduction to Readings in Hispanic Literature	3
SPAN 322	Latin American Short Story **	3
SPAN 331	Spanish Golden Age Literature **	3
SPAN 340	Contemporary Latin-American Narrative **	3
SPAN 342	Latin American Feminist Voices **	3
SPAN 343	The New Drama in Latin American **	3
SPAN 345	Hispanic Autobiographical Writing **	3
SPAN 350	Spanish Fiction **	3
SPAN 351	Hispanic Turn of the Century Literature **	3
SPAN 353	Transatlantic Vanguard **	3
SPAN 358	Latin American Cinema **	3
SPAN 370	Special Topics in Spanish **	3
SPAN 385	Hispanic Literature in Translation **	3
SPAN 398	Honors Thesis II **	3
SPAN 399	Independent Study **	1 - 3

* 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. This program is associated with the master's degree program 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. Full-time students are expected to complete the MA within two academic years.

The MA in World Literature requires 30 hours.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

ARAB 399. Independent Study in Arabic. 1 - 3 Units.

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. Offered as CHIN 240, ASIA 240 and WLIT 240. Counts for CAS Global & Cultural Diversity Requirement.

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. Offered as CHIN 250, ASIA 250 and WLIT 250. Counts for CAS Global & Cultural Diversity Requirement.

CHIN 253. Introducing Chinese Religions. 3 Units.

This "topics" course offers an introduction to the academic study of Chinese religions. Whether approached through a particular theme or as a general historical introduction, each section of this course provides students with a general introduction to the academic study of religion and a basic religious literacy in the nuances and complexities in Chinese religions within various historical and socio-cultural contexts. Section topics might include, but are not limited to: Confucianism, Daoism, Chinese Buddhism, Gender and Sexuality in Chinese Religions. Students may repeat the course for credit once (two times total for 6 credits), provided that the two sections are different. Offered as RLGN 153, ETHS 153 and CHIN 253. Counts for CAS Global & Cultural Diversity Requirement.

CHIN 253C. Religion and Philosophy in China. 3 Units.

This course critically examines the three principal religious and philosophical traditions of China: the Confucian, Daoist, and Chinese Buddhist traditions. Through a combination of assigned print and online readings, video clips and documentaries, class discussions, and written assignments, students explore the origins and historical developments, principal thinkers, central religious and doctrinal themes, ethics, spirituality, popular devotions, social movements, and contemporary developments of these three major religious and philosophical traditions of China. Students will consider the wider social, cultural, ethical, economic, and political dimensions of Chinese religions and philosophies generally, and themes of community and society, identity constructions, personal experiences, movements, as well as their socio-cultural reproductions in contemporary China, and where appropriate, the Chinese Diaspora in North America. Offered as CHIN 253C, ETHS 253C, PHIL 253 and RLGN 253.

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. Counts for CAS Global & Cultural Diversity Requirement.

CHIN 302. Advanced Chinese II. 4 Units.

Continuation of CHIN 301. Counts for CAS Global & Cultural Diversity Requirement.

CHIN 303. Topics in Chinese. 3 Units.

Work with authentic materials to improve proficiency in Chinese. Emphasis on contemporary culture of China. Recommended preparation: CHIN 302.

CHIN 307. Body, Health and Medicine in Chinese Religions: Historical and Contemporary Perspectives. 3 Units.

This course critically evaluates the history and development of traditional Chinese approaches to health and medicine in the context of Chinese religious, philosophical, and socio-cultural history. It examines the constructions of the body in Chinese religious and philosophical thought across different historical periods and evaluates their significance and implications for understanding Chinese approaches to health and medicine. It discusses the conceptions of "health" and "good health" in ancient China, the distinction between "healing" and "curing," the development of the complementary yin-yang and five phases (wuxing) theories, understandings of nature (xing) and body (ti), the concept of qi as life force, and various microcosm-macrocosm analogies that emerged from Chinese religious and philosophical traditions. It explores how these religious and philosophical frameworks, beginning with the Daoist classic, *Basic Questions in the Inner Classic of the Yellow Emperor* (Huangdi Neijing Suwen) have evolved to undergird the development of diet, acupuncture, moxibustion, meditation, and various alchemical practices within Chinese holistic conceptions of health and practices of Traditional Chinese Medicine. Offered as RLGN 307, RLGN 407, CHIN 307, HSTY 308, and ETHS 307. Counts as SAGES Departmental Seminar. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement. Prereq: CHIN 202 or equivalent.

CHIN 316. Christianity in China. 3 Units.

This course critically evaluates Christianity's long history in China, beginning with the "Luminous Religion" (Jingjiao) that was propagated by Assyrian Christian missionaries in Tang China (7th century CE), the missionary endeavors of Catholic and Protestant foreign missionaries and mission societies, the rise of indigenous Chinese Christianities that sought independence from foreign missionaries, the impact of communist rule and the Cultural Revolution, and current developments involving both the official government-approved churches (i.e., the Three Self Patriotic Movement and the Chinese Patriotic Catholic Association) on the one hand, and the house church movement (jiating jiaohui) on the other hand. Students will critically discuss and analyze the historical dimensions of Christianity's presence in China and engagement with various social, cultural, political, philosophical, and religious aspects of Chinese society, past and present, and consider the implications of emergent forms of contemporary indigenous Chinese Christian movements for the future of Chinese Christianity. Offered as RLGN 316, RLGN 416, HSTY 322, CHIN 316 and ETHS 326. Counts for CAS Global & Cultural Diversity Requirement.

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. Offered as: CHIN 320, ASIA 320 and WLIT 320. Counts for CAS Global & Cultural Diversity Requirement.

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. Offered as CHIN 330 and ASIA 330. Counts for CAS Global & Cultural Diversity Requirement.

CHIN 340. China Modernizes. 3 Units.

This three credit-hour course is a content-based Chinese language course, which combines Chinese language learning with an introduction to various dimensions of modernization in contemporary China, including economic, cultural, social, political, and technological changes such as business and jobs, urban and rural development and migration, housing and tourism, as a result of economic reforms, trade expansion, international relations, foreign investments, technology transfer, education, science and technology advancement, especially in the production, research and development, and market expansion. The course will also assess the impacts of these changes on various aspects of globalization and vice versa. This class is taught in both Chinese and English. At the end of the class, the students are expected to have improved both their Chinese language proficiency and their competence of understanding, communicating, and critically thinking the covered China related topics. Counts for CAS Global & Cultural Diversity Requirement. Prereq: CHIN 202.

CHIN 350. China and Green Cultural Transformation. 3 Units.

Taught in Chinese, this course aims at enhancing the students' proficiency in listening to, speaking, reading and writing Chinese at the intermediate and higher levels. As a content-driven course, it introduces students to the recent major green culture movements in China, focusing on the way the green cultural changes took place in relation to globalization, environment and climate protection, technology innovation, income redistribution, domestic consumption, and education, to meet the challenges of financial crisis, climate change, energy insecurity, and international competition. At the end of the semester, the students are expected to be able to understand readings and audiovisual materials, as well as communicate and present orally and in written formats green cultural issues covered in the course. Students who take CHIN350 are not allowed to earn credit for CHIN350D (Department Seminar), vice versa. T Counts for CAS Global & Cultural Diversity Requirement. Prereq: CHIN 301.

CHIN 350D. China and Green Cultural Transformation. 3 Units.

Taught in Chinese, this course aims at enhancing the students' proficiency in listening to, speaking, reading and writing Chinese at the intermediate and higher levels. As a content-driven course, it introduces students to the recent major green culture movements in China, focusing on the way the green cultural changes took place in relation to globalization, environment and climate protection, technology innovation, income redistribution, domestic consumption, and education, to meet the challenges of financial crisis, climate change, energy insecurity, and international competition. At the end of the semester, the students are expected to be able to understand readings and audiovisual materials, as well as communicate and present orally and in written formats green cultural issues covered in the course. Students who take CHIN350 are not allowed to earn credit for CHIN350D (Department Seminar), vice versa. Counts as SAGES Departmental Seminar. Prereq: CHIN 340.

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. Counts for CAS Global & Cultural Diversity Requirement. 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. Counts for CAS Global & Cultural Diversity Requirement. Prereq: CHIN 380.

CHIN 396. Senior Capstone - Chinese. 3 Units.

This course is a required capstone course for Chinese majors. Students will complete a substantial research thesis in Chinese or English and make a public presentation in English with significant Chinese elements. Students take this course under the supervision of their faculty advisor. Permission required.

CHIN 397. Senior Thesis I. 3 Units.

This course is the first of the two-semester thesis-writing sequence for majors in Chinese pursuing honors in the major. The two-semester sequence leads to a substantial research paper in Chinese or English with significant Chinese elements. Students take this course under the supervision of their faculty advisor. Counts for CAS Global & Cultural Diversity Requirement. Prereq: Chinese major with Senior standing.

CHIN 398. Senior Thesis II. 3 Units.

This course is the second of the two-semester thesis-writing sequence required for Chinese majors pursuing honors in the major. The two semester sequence leads to a substantial research paper in Chinese or English with significant Chinese elements. Students take this course under the supervision of their faculty advisor. Prereq: CHIN 397.

CHIN 399. Independent Study. 1 - 3 Units.

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. Counts for CAS Global & Cultural Diversity Requirement. 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. Counts for CAS Global & Cultural Diversity Requirement. 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.

Continuation of FRCH 101. Recommended preparation: FRCH 101.

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. Counts for CAS Global & Cultural Diversity Requirement.

FRCH 308. Immigration and the Paris Experience. 3 Units.

Three-week immersion learning experience living and studying in Paris. The focus of the course is the culture, literature, and the arts of the African, Arab, and Asian communities of Paris. At least half of the course looks at issues surrounding immigration that affect women in particular. 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, ETHS 308, and WGST 308 students have the option of completing coursework in English. Graduate students have additional course requirements. Offered as FRCH 308, WLIT 308, ETHS 308, WGST 308, FRCH 408, and WLIT 408. Counts for CAS Global & Cultural Diversity Requirement. Prereq: FRCH 202.

FRCH 309. French for Diplomacy and International Relations. 3 Units.

French for Diplomacy is an upper-level course with a focus on learning the linguistic and socio-cultural competency specific to the professions associated with diplomacy and international relations within the Francophone world. The course will outline the characteristics of European institutions and will focus on interpersonal and social relations necessary for working within them. In this course, students will develop their communication and comprehension skills through oral and written activities in the context of authentic situations of negotiations, thematic presentations and reports including missions and projects. Some examples of themes covered are negotiations in the professional world, economics, social and human rights, finance, education, peacekeeping and ecology. Finally, whenever possible, the course will be complemented by cultural exchanges in conjunction with programs featured by the French Consulate in Chicago. Counts for CAS Global & Cultural Diversity. This course prepares students for the French for Professions Diploma (DFP, Diplôme de Français Professionnel) in International Relations offered by the French Chamber of Commerce and Industry of Paris. Students may undertake the DFP on a voluntary basis. Students must pay a nominal fee for certification testing. Counts for CAS Global & Cultural Diversity Requirement. 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. Counts for CAS Global & Cultural Diversity Requirement. 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. Counts for CAS Global & Cultural Diversity Requirement. 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. Counts for CAS Global & Cultural Diversity Requirement. 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. Counts for CAS Global & Cultural Diversity Requirement. Prereq: FRCH 202.

FRCH 315. French for Business. 3 Units.

Business French is an upper-level course with a focus on the economic life of France and other Francophone countries. In this course, students will enhance their comprehension and communications skills through oral and written activities in the context of authentic situations of negotiations as related to the economic structures and the business organization of Francophone countries. Some examples of themes covered are negotiations in the professional world, economics, social rights, finance, and business and commercial contexts. Finally, whenever possible, the course will be complemented by cultural exchanges in conjunction with programs featured by the French Consulate in Chicago and/or internships in French-speaking companies in the region or abroad. Counts for CAS Global & Cultural Diversity Requirement. This course prepares students for the French for Professions Diploma (DFP, Diplômes de Français Professionnel) in Business offered by the French Chamber of Commerce and Industry of Paris. Students may undertake the DFP on a voluntary basis. Students must pay a nominal fee for certification testing. Counts for CAS Global & Cultural Diversity Requirement. 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. Counts for CAS Global & Cultural Diversity Requirement. Prereq: FRCH 202 or equivalent.

FRCH 317. French Cinema. 3 Units.

An exploration of modern France, its images and values as presented in French films. French press reviews are used for discussion. A unique linguistic and cultural immersion. Recommended preparation: FRCH 310. Prereq: FRCH 202.

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. Counts for CAS Global & Cultural Diversity Requirement. 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. Counts for CAS Global & Cultural Diversity Requirement. 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. Counts for CAS Global & Cultural Diversity Requirement. 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. Counts for CAS Global & Cultural Diversity Requirement. Prereq: FRCH 202. Coreq: FRCH 320.

FRCH 328. Science and Technology in France. 3 Units.

The course is an exploration of the development of science and technology in France, its rise in the 18th and 19th century, its subsequent decline until the mid-20th century, and its more recent renaissance—from both a scientific and humanities perspective. A significant component will focus on the contributions of women to science in France. Students will visit historical sites such as Marie Curie's laboratory and the Foucault pendulum, as well as current research facilities such as the Soleil Synchrotron outside of Paris and the Large Hadron Collider in France/Switzerland. To supplement these site visits, readings will come from the fields of science and technology (e.g., popular journals such as *Scientific American*), history, and French literature—either in French or English translation as appropriate for the student and the enrollment choice. Offered as FRCH 328, FRCH 428, PHYS 333, WGST 333, WLIT 353 and WLIT 453. Counts for CAS Global & Cultural Diversity Requirement. Prereq: FRCH 202 or Requisites Not Met permission.

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, 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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement. Prereq or Coreq: FRCH 320.

FRCH 361. 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. 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. Counts for CAS Global & Cultural Diversity Requirement. 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. Counts for CAS Global & Cultural Diversity Requirement. 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. Counts for CAS Global & Cultural Diversity Requirement. 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. Counts for CAS Global & Cultural Diversity Requirement. Prereq or Coreq: FRCH 320.

FRCH 396. Senior Capstone - French. 3 Units.

The Senior Capstone in French in 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 Units.

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. Immigration and the Paris Experience. 3 Units.

Three-week immersion learning experience living and studying in Paris. The focus of the course is the culture, literature, and the arts of the African, Arab, and Asian communities of Paris. At least half of the course looks at issues surrounding immigration that affect women in particular. 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, ETHS 308, and WGST 308 students have the option of completing coursework in English. Graduate students have additional course requirements. Offered as FRCH 308, WLIT 308, ETHS 308, WGST 308, FRCH 408, and WLIT 408. Counts for CAS Global & Cultural Diversity Requirement. 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. Counts for CAS Global & Cultural Diversity Requirement. 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. Counts for CAS Global & Cultural Diversity Requirement. Prereq: Graduate Standing.

FRCH 428. Science and Technology in France. 3 Units.

The course is an exploration of the development of science and technology in France, its rise in the 18th and 19th century, its subsequent decline until the mid-20th century, and its more recent renaissance—from both a scientific and humanities perspective. A significant component will focus on the contributions of women to science in France. Students will visit historical sites such as Marie Curie's laboratory and the Foucault pendulum, as well as current research facilities such as the Soleil Synchrotron outside of Paris and the Large Hadron Collider in France/Switzerland. To supplement these site visits, readings will come from the fields of science and technology (e.g., popular journals such as *Scientific American*), history, and French literature—either in French or English translation as appropriate for the student and the enrollment choice. Offered as FRCH 328, FRCH 428, PHYS 333, WGST 333, WLIT 353 and WLIT 453. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement. 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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

FRCH 601. Independent Study. 1 - 18 Units.

For individual students or larger groups with special interests.

FRCH 651. Thesis M.A.. 6 - 9 Units.

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. Counts for CAS Global & Cultural Diversity Requirement. Prereq: GRMN 202.

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, precis, 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 tragicomedy. Focus: effective communication of critical, interpretative, 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, interpretative, and analytic ideas in discussion and in writing. Counts as SAGES Departmental Seminar. Counts for CAS Global & Cultural Diversity Requirement. 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. Counts for CAS Global & Cultural Diversity Requirement. 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. Counts for CAS Global & Cultural Diversity Requirement. 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. Counts for CAS Global & Cultural Diversity Requirement. Prereq: One 300-level GRMN course.

GRMN 330. Topics in German Cinema. 3 Units.

This course has the following objectives: 1) View and comprehend 14 German movies; 2) discuss German language, history, and culture as well as film making as they are reflected in the German movies featured in this course; and 3) learn how to write film reviews on German movies in German and English. It provides an 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. The course will be mainly taught in German. It counts to SAGES Departmental Seminar Requirement. Counts as SAGES Departmental Seminar. 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. Counts for CAS Global & Cultural Diversity Requirement. 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. Counts for CAS Global & Cultural Diversity Requirement. 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. Counts for CAS Global & Cultural Diversity Requirement. 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 WLIT 365.

GRMN 367. German Classicism/Romanticism. 3 Units.

Selected works of Goethe, Schiller, Hoelderlin, von Kleist, and others. Counts for CAS Global & Cultural Diversity Requirement. 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. Counts for CAS Global & Cultural Diversity Requirement. 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. Counts for CAS Global & Cultural Diversity Requirement. 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." Counts for CAS Global & Cultural Diversity Requirement. Prereq: One 300-level GRMN course.

GRMN 396. Senior Capstone - German. 3 Units.

The Senior Capstone in German in 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 399. Independent Study in German. 1 - 3 Units.

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 102 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 301. 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 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 Units.

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. Counts for CAS Global & Cultural Diversity Requirement. 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. Counts for CAS Global & Cultural Diversity Requirement. Prereq: ITAL 202 or equivalent.

ITAL 370. Special Topics in Italian Literature. 3 Units.

Special topics in Italian literature, literary criticism, and culture. Counts for CAS Global & Cultural Diversity Requirement. Prereq: ITAL 202 or equivalent.

ITAL 399. Independent Study. 1 - 3 Units.

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 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.

Continuation of JAPN 101. Emphasizes aural comprehension, speaking, reading, and writing. Students learn approximately 100 new kanji characters. Recommended preparation: JAPN 101.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

JAPN 215. The World of Manga. 3 Units.

Manga (comic books and graphic novels) is one of the most important aspects of contemporary visual culture in Japan. It is consumed by millions of Japanese every day, and has attracted intense attention around the world. As it constitutes one third of the annual publications in Japan today, its breadth and scope are limitless. What does manga reveal about contemporary cultural production and consumption in Japan? What kind of special features are used in manga to attract people so much? What kind of genres do they have and what kind of readers do they have? These are some of the questions we will explore by surveying a large number of works produced in the last fifty years. Introducing graphic novels by major artists and writers, the course will expand your understanding of key components, social movements and discourses associated with manga. You will examine the history of manga, its aesthetics, and social impact through assigned readings, including scholarly papers and manga books, as well as works selected by each student (in original Japanese or in English translation).

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. Counts for CAS Global & Cultural Diversity Requirement.

JAPN 235. The Japan Experience: Kyoto - Language, Culture & Exchanges. 3 Units.

The Japan Experience: Kyoto is designed to provide students an opportunity to use Japanese language skills they have acquired in real life situations and deepen their understanding of Japanese language and culture through experiential learning. The course has three major learning components: "Japanese Language Learning through Activities and Cultural Experiences," "Japan Exploration Project," and "Exchanges with Local College Students" and will consist of class meetings before the trip focused on preparation followed by 15 days in Kyoto. Japanese Language Learning through Activities and Cultural Experiences: In Kyoto students will explore the local neighborhood and report their findings in class. Several cultural activities will be organized: Zen meditation, tea activity, Japanese cooking class, etc. The tea activity will include a rare opportunity for students to meet a tea ceremony master and experience the way of Japanese traditional tea. Exchanges with Local College Students: Students from CWRU will be able to take advantage of Ritsumeikan University's "Buddies" program where Japanese student volunteers are paired with participants to improve conversational skills and become better acquainted with the campus and Kyoto. CWRU students will also visit classes at a local college in Osaka for exchanges with students there. These exchanges will allow participants to reinforce their language skills, develop better communication skills, and deepen cultural understanding in both classroom and real-life settings. Japan Exploration Project: Students will complete individual projects during the course. They will design their own projects using resources available in Kyoto before the trip and prepare for it. Project themes will be chosen by students based on their interests. At the end of course, students will give presentations in Japanese, demonstrating their language proficiency development. Counts for CAS Global & Cultural Diversity Requirement. Prereq: JAPN 201.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

JAPN 265. Constructing the Samurai: Images of Japanese Warriors from 1100's to the Present. 3 Units.

From concepts of premodern warriors calling out their names before doing hand-to-hand combat to modern salary men crushing the world with their economic prowess, samurai have come to be an iconic image of the Japanese people. Throughout the semester we will pay particular attention to the central themes in the historiography of warrior society, roughly, the years between ca. 1110 and 1850 C.E. We will investigate how these documents were translated by modern societies, both east and west, in samurai film. Students will explore the category of "samurai" through reading selections from *The Tale of the Heike*, as well as selected Noh plays, legal documents, travel diaries, autobiographies, short stories, and historical texts. In addition, we will investigate other genres contributing to the construction of the idea of "samurai," such as film. This seminar will closely examine the concept of "samurai," particularly its connection to the Japanese identity using an interdisciplinary context of the arts, history, religion, and literature. We will also explore the ways in which daimyo (feudal lords), authors, Buddhist officials, and filmmakers throughout the world created, shaped, and altered the ideal image of the samurai. Key to understanding the concept of samurai will be wrestling with questions of authorship, spirit pacification, nationality, and patronage, with specific focus on the Japanese relationship with Western nations and cultures. We will focus on language and its role in legitimizing the global concepts of "samurai" and "bushido." This class will provide additional insight geared toward the cultural study of linguistic identities beyond those informed by the English language and will include terms expressed in Japanese. Many of the resources used in this course will be translated from the Japanese, allowing us to consider Naoki Sakai's theories of enunciation/ translation/ subjectivity, Haruo Shirane's theory of reception, and Michael Emmerich's theory of replacement. Especially important will be to focus on terms in Japanese with no, or poor, English equivalent (such as samurai, shogun, daimyo, bushido, etc.) but with clear images in the English-speaking imagination(s). The instructor will provide background information on political, cultural, and religious history. Class sessions will be conducted in English and combine lectures, discussion, audio-visual materials, and creative as well as analytical writing exercises. All readings and films will be in English or with English subtitle. Offered as JAPN 265 and WLIT 265. Counts for CAS Global & Cultural Diversity Requirement.

JAPN 301. Advanced Japanese I. 4 Units.

Emphasizes conversational proficiency and reading. Recommended preparation: JAPN 202 or equivalent. Counts for CAS Global & Cultural Diversity Requirement.

JAPN 302. Advanced Japanese II. 4 Units.

Continuation of JAPN 301; emphasizes conversational proficiency and reading. Recommended preparation: JAPN 301 or equivalent. Counts for CAS Global & Cultural Diversity Requirement.

JAPN 315. Origins of Anime: Classical Texts, Modern Manga, Anime, and Tales. 3 Units.

Modern anime and manga authors and artists captivate audiences with rich stories and stylized art. This course investigates the origins of these stories by engaging premodern Japanese texts (in English language translation) and modern literary theory. Throughout the semester we will pay particular attention to commonalities among these literatures and narrative genres, as well as the extent they differ due to temporal/socio/religio/political concerns. Western and Asian literary theories, especially those concerning topics of translation, replacement, negotiation with classics, and gender and sexuality will also be extensively explored. We will interpret the historic human endeavor of story telling within the contexts of time and space and through a critical self-awareness of our own positions in the modern world. Students will prepare individual research projects and be responsible for finding and presenting primary sources and secondary research. The instructor will provide background information on political, cultural, and religious history as well as present on details of literary theory. The aim is to encourage students to critically analyze the modern perception of past events. Every topic will be addressed in three phases. First, the students will discover historical events, literature, and people through reading primary sources in English translation. In a second phase, we will see how these stories are depicted in movies, animation, or manga. Finally, students will perform research to explore the differences between the premodern sources and their modern adaptation and determine how we can use such a comparison to critically analyze the way modern storytellers recreate the past. Class sessions will combine lectures, discussion, and audio-visual materials. Offered as JAPN 315 and WLIT 315. Counts for CAS Global & Cultural Diversity Requirement.

JAPN 335. Japanese Linguistics. 3 Units.

The purpose of this course is to survey the principal research in Japanese linguistics for students who have basic knowledge of Japanese and are interested in more in-depth treatment of linguistic phenomena (phonetics, phonology, morphology, syntax, semantics, etc.). Lectures and discussions will cover many different aspects of the Japanese language. There is a great deal of analytic studies of the Japanese language done both inside and outside Japan, which will be surveyed in this course. Students will become familiar with the major issues through lectures and class discussions, as well as through their reading of both primary and secondary sources. Both formal and functional approaches to the analysis of Japanese will be examined, and the acquisition of these structures will also be discussed. The course will also be useful for the improvement of students' Japanese language proficiency. Recommended preparation: JAPN 101 and JAPN 102, or equivalent competence in Japanese. Offered as COGS 335, COGS 435, JAPN 435, LING 335 and LING 435. Counts for CAS Global & Cultural Diversity Requirement.

JAPN 337. Love and Loss: Reading The Tale of Genji. 3 Units.

Murasaki Shikibu's *The Tale of Genji* (c. 1000 CE), the great Japanese classic often referred to as "the world's first novel," has been praised by countless readers and scholars since it was first circulated within the imperial court. In this course we will read the entire text in English translation. We will focus on themes of love and loss, paying special attention to the substitution that results from the hero, the shining prince Genji, losing his mother at a tender age and attempting to fill the void she left. Since Genji is popularly thought of as a "playboy," we will investigate the thematic, historic, political, social, and religious descriptions within Genji's (many) love affairs, with a special emphasis on issues of gender. We will also consider the poetry, imagery, costume, music, religion, theater, and material culture of the mid-Heian era, which is encapsulated in the tale. Students will prepare individual research projects and be responsible for finding and presenting primary sources and secondary research. The instructor will provide background information on political, cultural, and religious history as well as present on details of literary theory. The aim is to encourage students to critically analyze the modern perception of the past. Class sessions will combine lectures, discussion, and audio-visual materials. All material is in English translation. There are no prerequisites. The course is conducted in English. Offered as JAPN 337 and WLIT 337.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement. 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 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 and WLIT 355. Counts as SAGES Departmental Seminar. Counts for CAS Global & Cultural Diversity Requirement.

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 Units.

Directed study for students who have progressed beyond available course offerings.

JAPN 435. Japanese Linguistics. 3 Units.

The purpose of this course is to survey the principal research in Japanese linguistics for students who have basic knowledge of Japanese and are interested in more in-depth treatment of linguistic phenomena (phonetics, phonology, morphology, syntax, semantics, etc.). Lectures and discussions will cover many different aspects of the Japanese language. There is a great deal of analytic studies of the Japanese language done both inside and outside Japan, which will be surveyed in this course. Students will become familiar with the major issues through lectures and class discussions, as well as through their reading of both primary and secondary sources. Both formal and functional approaches to the analysis of Japanese will be examined, and the acquisition of these structures will also be discussed. The course will also be useful for the improvement of students' Japanese language proficiency. Recommended preparation: JAPN 101 and JAPN 102, or equivalent competence in Japanese. Offered as COGS 335, COGS 435, JAPN 435, LING 335 and LING 435. Counts for CAS Global & Cultural Diversity Requirement.

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 302. Second Language Acquisition II: Second Language Acquisition Research and Second Language Teaching. 3 Units.

This course will examine various issues in second language acquisition research that are particularly relevant to foreign language teaching and learning. Topics covered will include: the role of input (listening/reading) vs. output (speaking/writing); implicit vs. explicit learning; negative vs. positive evidence (including the role of error correction); affective factors (motivation, anxiety); individual differences; teachability hypothesis and syllabus construction, program design/evaluation, language testing, among others. The purpose of this course is to survey the principal research in the acquisition of second language that is relevant to second language teaching in a classroom setting, and to obtain the state-of-the-art knowledge of the SLA research literature that is relevant to L2 teaching. The focus is not necessarily on the practical application of the SLA research, although we will not exclude discussion of classroom application. Rather, we critically examine and evaluate SLA research and come up with our own syntheses with respect to various issues. To achieve this goal, we should ask following questions in reading and discussing the relevant literature: 1) What are the main claims that the author(s) make(s)? 2) Are the author's claims sound? If not why? 3) What further research is needed to answer remaining questions? 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. The students are required to complete a term project that addresses the issues treated in the course. Offered as LING 302, LING 402, COGS 314 and COGS 414. Prereq: LING 301 or requisites not met permission.

LING 309. Introduction to Applied Linguistics. 3 Units.

This course provides students with answers to the question, "Linguistics? What can you do with that?" We will survey the ways that linguistics has been used (i.e. applied) to solve 'real world' problems. Some of these, like computational linguistics and the teaching of language, are intimately involved in language, even though they do not necessarily concern themselves with linguistic theory. Others, such as language and the law, use linguistics as a tool to do their work. We will be concerned with understanding the various ways that linguistic inquiries have been used or neglected, and also with the implications of applied fields for linguistic theories. Offered as LING 309, LING 409, COGS 331 and COGS 431. Counts for CAS Global & Cultural Diversity Requirement.

LING 335. Japanese Linguistics. 3 Units.

The purpose of this course is to survey the principal research in Japanese linguistics for students who have basic knowledge of Japanese and are interested in more in-depth treatment of linguistic phenomena (phonetics, phonology, morphology, syntax, semantics, etc.). Lectures and discussions will cover many different aspects of the Japanese language. There is a great deal of analytic studies of the Japanese language done both inside and outside Japan, which will be surveyed in this course. Students will become familiar with the major issues through lectures and class discussions, as well as through their reading of both primary and secondary sources. Both formal and functional approaches to the analysis of Japanese will be examined, and the acquisition of these structures will also be discussed. The course will also be useful for the improvement of students' Japanese language proficiency. Recommended preparation: JAPN 101 and JAPN 102, or equivalent competence in Japanese. Offered as COGS 335, COGS 435, JAPN 435, LING 335 and LING 435. Counts for CAS Global & Cultural Diversity Requirement.

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.

LING 402. Second Language Acquisition II: Second Language Acquisition Research and Second Language Teaching. 3 Units.

This course will examine various issues in second language acquisition research that are particularly relevant to foreign language teaching and learning. Topics covered will include: the role of input (listening/reading) vs. output (speaking/writing); implicit vs. explicit learning; negative vs. positive evidence (including the role of error correction); affective factors (motivation, anxiety); individual differences; teachability hypothesis and syllabus construction, program design/evaluation, language testing, among others. The purpose of this course is to survey the principal research in the acquisition of second language that is relevant to second language teaching in a classroom setting, and to obtain the state-of-the-art knowledge of the SLA research literature that is relevant to L2 teaching. The focus is not necessarily on the practical application of the SLA research, although we will not exclude discussion of classroom application. Rather, we critically examine and evaluate SLA research and come up with our own syntheses with respect to various issues. To achieve this goal, we should ask following questions in reading and discussing the relevant literature: 1) What are the main claims that the author(s) make(s)? 2) Are the author's claims sound? If not why? 3) What further research is needed to answer remaining questions? 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. The students are required to complete a term project that addresses the issues treated in the course. Offered as LING 302, LING 402, COGS 314 and COGS 414. Prereq: LING 401 or requisites not met permission.

LING 409. Introduction to Applied Linguistics. 3 Units.

This course provides students with answers to the question, "Linguistics? What can you do with that?" We will survey the ways that linguistics has been used (i.e. applied) to solve 'real world' problems. Some of these, like computational linguistics and the teaching of language, are intimately involved in language, even though they do not necessarily concern themselves with linguistic theory. Others, such as language and the law, use linguistics as a tool to do their work. We will be concerned with understanding the various ways that linguistic inquiries have been used or neglected, and also with the implications of applied fields for linguistic theories. Offered as LING 309, LING 409, COGS 331 and COGS 431. Counts for CAS Global & Cultural Diversity Requirement.

LING 435. Japanese Linguistics. 3 Units.

The purpose of this course is to survey the principal research in Japanese linguistics for students who have basic knowledge of Japanese and are interested in more in-depth treatment of linguistic phenomena (phonetics, phonology, morphology, syntax, semantics, etc.). Lectures and discussions will cover many different aspects of the Japanese language. There is a great deal of analytic studies of the Japanese language done both inside and outside Japan, which will be surveyed in this course. Students will become familiar with the major issues through lectures and class discussions, as well as through their reading of both primary and secondary sources. Both formal and functional approaches to the analysis of Japanese will be examined, and the acquisition of these structures will also be discussed. The course will also be useful for the improvement of students' Japanese language proficiency. Recommended preparation: JAPN 101 and JAPN 102, or equivalent competence in Japanese. Offered as COGS 335, COGS 435, JAPN 435, LING 335 and LING 435. Counts for CAS Global & Cultural Diversity Requirement.

MLIT Course**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, COGS 427 and MLIT 327. Counts as SAGES Departmental Seminar.

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 Units.

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.

Continuation of RUSN 101, emphasizing audiolingual practice. Recommended preparation: RUSN 101.

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 305. Russian Song. 1 Unit.

The Russian Song course is dedicated to the exploration and performance of vocal music from Russia and the former USSR. Russia comprises many ethnic groups and has a vast repertoire of folk music, folk instruments, and singing styles. Students will learn children's songs, art songs, "city" romances, Cossack songs, Georgian polyphony and folk dances. Each song is placed in context, with an eye towards culture, symbolism, history, poetry/lyrics, and customs. Students will look at how classical composers use Russian folk music in their long forms. The study of Chastushki, an ancient Russian village phenomenon which continues to evolve, will lead to creating students' own stylistically appropriate poetry and ostinato. Russian percussion and other instruments will enhance the song and dance, all culminating in a final performance at the end of the semester. Offered as RUSN 305 and MUGN 310.

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 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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

RUSN 399. Independent Study. 1 - 3 Units.**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 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 States in the region. The course will be taught in English. Offered as SPAN 303 and SPAN 403. Counts for CAS Global & Cultural Diversity Requirement.

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. Prereq: 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 in Matanzas and Havana, Cuba. The course combines the unique advantages of a total immersion environment in the Cuban culture with a classroom curriculum that includes the study of relevant cultural, literary and historical issues. Students complete three hours of classroom instruction and an hour and a half of workshop four days per week. Also, 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 into 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 three upper-level credits in Spanish or Ethnic Studies. The course is interdisciplinary in its 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. Also, 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. Counts for CAS Global & Cultural Diversity Requirement.

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. Offered as SPAN 315 and SPAN 415. Counts for CAS Global & Cultural Diversity Requirement. 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. Counts for CAS Global & Cultural Diversity Requirement. 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. Offered as SPAN 322 and SPAN 422. Counts for CAS Global & Cultural Diversity Requirement. 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 331. Spanish 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 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, and ETHS 333. Counts for CAS Global & Cultural Diversity Requirement. Prereq: SPAN 320.

SPAN 334. 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. Counts for CAS Global & Cultural Diversity Requirement. Prereq: SPAN 320.

SPAN 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 and SPAN 439. Counts for CAS Global & Cultural Diversity Requirement. 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 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, and WGST 342. Counts for CAS Global & Cultural Diversity Requirement. 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 and ETHS 343. Counts for CAS Global & Cultural Diversity Requirement. 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 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. 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 and ETHS 356. Counts for CAS Global & Cultural Diversity Requirement. 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 and ETHS 358. Counts for CAS Global & Cultural Diversity Requirement. 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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement. 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. Counts for CAS Global & Cultural Diversity Requirement.

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 Units.

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 403. 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. Offered as SPAN 303 and SPAN 403. Counts for CAS Global & Cultural Diversity Requirement.

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 in Matanzas and Havana, Cuba. The course combines the unique advantages of a total immersion environment in the Cuban culture with a classroom curriculum that includes the study of relevant cultural, literary and historical issues. Students complete three hours of classroom instruction and an hour and a half of workshop four days per week. Also, 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 into 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 three upper-level credits in Spanish or Ethnic Studies. The course is interdisciplinary in its 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. Also, 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. Counts for CAS Global & Cultural Diversity Requirement. Prereq: SPAN 202.

SPAN 415. 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. Offered as SPAN 315 and SPAN 415. Counts for CAS Global & Cultural Diversity Requirement.

SPAN 422. 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. Offered as SPAN 322 and SPAN 422. Counts for CAS Global & Cultural Diversity Requirement.

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, and ETHS 333. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement. 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 and SPAN 439. Counts for CAS Global & Cultural Diversity Requirement.

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, and WGST 342. Counts for CAS Global & Cultural Diversity Requirement.

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 and ETHS 343. Counts for CAS Global & Cultural Diversity Requirement.

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 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 and ETHS 356. Counts for CAS Global & Cultural Diversity Requirement.

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 and ETHS 358. Counts for CAS Global & Cultural Diversity Requirement.

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 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. Counts for CAS Global & Cultural Diversity Requirement. Prereq: Graduate standing.

SPAN 499. Graduate Independent Study. 3 Units.

This class will fulfill the requirement of graduate students who need to complete their course-load focusing on specific topics related to their fields of study.

Department of Music

Haydn Hall 201
music.case.edu/ (<http://music.case.edu/>)
 Phone: 216.368.2400; Fax: 216.368.6557
 David J. Rothenberg, Department Chair
david.rothenberg@case.edu

The Department of Music (<https://music.case.edu/about/>) is an academic department within the College of Arts and Sciences (<https://artsci.case.edu/>). Our program serves undergraduate and graduate students at Case Western Reserve University as well as all students at the Cleveland Institute of Music (<http://www.cim.edu/>) through our Joint Music Program (<https://music.case.edu/about/jmp/>).

Mission Statement

The mission of the Department of Music is to:

- Foster preeminent research, creative endeavors, and learning.
- Support students in developing their musical skills and knowledge in the context of a liberal arts education; equip students to become proactive scholar-practitioners in music education; and promote the academic education of students from the Cleveland Institute of Music, through the Joint Music Program.
- Provide local, regional, national, and international leadership in the fields of musicology, historical performance practice, and music education, and help prepare the next generation of leaders in these fields.
- Encourage service to the institution and related academic disciplines, participation in faculty governance, and the promotion of open communication and shared policy-making.

We offer a wide range of courses, degree programs, and ensemble experiences, with faculty specializing in historical performance practice (<http://music.case.edu/hpp/>), music education (<https://music.case.edu/>)

academics/music-ed/), and musicology (<http://music.case.edu/musicology/>). Admission and audition procedures for all programs can be found in the Prospective Students (<https://music.case.edu/music-admissions/>) section on the Department of Music website (<https://music.case.edu/>).

Degree Programs

- **Music:** Bachelor of Arts (BA) with a major in music, Bachelor of Science (BS) in a unit other than the College of Arts and Sciences with a secondary major in music
- **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 Musical Arts (DMA)
- **Musicology:** Master of Arts in Music History (MA), Doctor of Philosophy (PhD)

Ensembles and Lessons

A number of music ensembles (<https://music.case.edu/ensembles-general-information/>) are open to all students. Entrance into primary ensembles may be subject to a gateway audition; others require an audition for part assignment. Students may elect to earn up to one credit unit per semester for participation. Auditions for ensembles are held during the first week of classes each semester. Applied music lessons (<https://music.case.edu/music-lessons-registration-secondary/>) are available to all CWRU students.

Further information is available on the Department of Music website (<http://music.case.edu/>).

Facilities, Centers, and Partnerships

Haydn Hall

Haydn Hall (<https://goo.gl/ghQde8/>) houses the Department of Music faculty and staff offices, a small lounge, three classrooms, four practice rooms (2nd floor), Historical Performance Practice studio space, the Music Education Resource Center, and a Macintosh computer classroom/lab (The Core). Located in the heart of the Mather Quad, Haydn Hall once 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.

Scheduling is controlled by the University Registrar and available for non-music classes with permission from the Department of Music. The practice rooms are open to music majors or CWRU students enrolled in music ensembles or applied music lessons.

Florence Harkness Memorial Chapel

Harkness Chapel (<https://goo.gl/bKg9gA/>), dedicated 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 (<https://music.case.edu/about/facilities/>)

weddings/florence-harkness-memorial-chapel/) was built to honor Florence Harkness Severance, the only daughter of Stephen Harkness and his second wife, Anna M. Richardson Harkness.

Harkness Classroom (<https://case.edu/utech/departments/client-experience/mediavision/technology-enhanced-classroom-tec/list-classrooms/harkness/>), located inside of Harkness Chapel, serves as an academic classroom and a backstage area during performances. This room contains 45 desks on risers and is equipped with Level 2 Technology, including video projection and a stereo sound system. Scheduling is controlled by the University Registrar, and the classroom is available for non-music classes with permission from the Department of Music.

Denison Hall

Denison Hall (<https://goo.gl/uauDeZ/>), located next to Wade Commons near the North Residential Village, is used primarily for ensemble rehearsals. This facility houses six Wenger practice modules, one of which is a “virtual reality” acoustic room; a percussion studio; and a music library. The four classrooms include the Spartan Rehearsal Hall (Rm. 197), Wade Rehearsal Hall (Rm. 119), Denison Rehearsal Hall (Rm. 160), and Denison Classroom (Rm. 152). The facility also has storage rooms for marching band uniforms, equipment and instrument storage lockers (available to music majors and students enrolled in ensembles). In general, the classrooms in Denison Hall are to be utilized by music majors or CWRU students enrolled in music ensembles or applied music lessons. Scheduling is controlled by the Department of Music.

The Core

(Haydn Hall, Rm. 16)

The Core (<http://music.case.edu/facilities/the-core/>) is a Macintosh computer classroom and lab dedicated to mind, sound, and vision. Open to all CWRU students, faculty and staff, as well as the University Circle community, the Core (<https://music.case.edu/the-core/>) provides a space 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 meeting space. The Core is actively involved in bringing technology to the community, particularly younger children, and it works closely with faculty in providing support facilities for the department’s technology-related courses.

Kulas Music Library

(Kelvin Smith Library (<https://goo.gl/YkTB5n/>), 1st floor)
Kulas Music Library (<https://case.edu/library/spaces/kulas-music-library/>) contains more than 45,000 items, including music scores, books on music, sound recordings, video recordings, microforms, and music periodicals. Music majors at the university also have access to the Robinson Music Library (<https://www.cim.edu/aboutcim/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 while also supporting the Joint Music Program.

Kulas Collection of Historical Instruments

The department maintains an impressive collection of modern reproductions of early instruments. The Historical Performance Practice program offers a wide range of ensembles from medieval to Romantic, and the Kulas Collection of Historical Instruments (<https://music.case.edu/centers-and-areas-of-study/historical-performance-practice/>) (Renaissance, medieval and Baroque string, wind, and brass instruments) is available to all students. The program also owns a wide

range of historical keyboard instruments: French, Italian, and German harpsichords, a continuo organ, and two fortepianos.

Music Education Resource Room

(Haydn Hall, Rm. 10)

The Music Education Resource Room (MERR) (<https://music.case.edu/academics/mused/>), a space for music education students to prepare educational materials and research projects, 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. The use of this center is encouraged and sometimes required, for many of the projects and assignments in courses throughout the music education curriculum.

Center for Popular Music Studies

The Center for Popular Music Studies (CPMS) (<https://music.case.edu/centers-and-areas-of-study/cpms/>) promotes scholarship and teaching about the history and significance of popular music, in part through collaborations with institutions in Cleveland and around the world. The goals of the CPMS include supporting collaboration between researchers and historians of popular music, investigating and creating new approaches to teaching popular music (including performance), providing opportunities for graduate students to learn about popular music in an active, critically robust program, and advancing emerging research in popular music through sponsorship of visiting scholars.

Maltz Performing Arts Center (MPAC)

The Milton and Tamar Maltz Performing Arts Center at The Temple–Tifereth Israel (<https://case.edu/maltzcenter/>) opened in 2015 after extensive restoration and renovation of a historic synagogue, built in 1924. Today, the center is an active venue for performances and events, including lectures and music concerts, including the Silver Hall Concert Series (<https://case.edu/maltzcenter/silverhallseries/>) (during which our department ensembles perform). Phase One of the renovation culminated in the opening of Silver Hall, a 1,000-seat concert hall for large ensemble performances, and Koch Hall, a 90-seat recital hall for smaller performances. Phase Two, which includes a proscenium theater, a black box studio theater, rehearsal studios, practice rooms, and costume and scene shops, is under construction.

Joint Music Program (JMP)

Since 1968, Case Western Reserve University and the Cleveland Institute of Music have participated in an integrated music program at the undergraduate and graduate levels. The Joint Music Program (JMP) (<https://music.case.edu/about/jmp/>) allows students at both institutions to take advantage of the resources of a major research university in the context of a liberal arts education as well as those of a leading conservatory. Students enrolled at CWRU take applied music lessons, studio instruction, chamber music, and music theory courses taught by CIM faculty, while students enrolled at CIM take music history, music education, and general education courses taught by CWRU faculty. Both CWRU and CIM are located in University Circle (<http://universitycircle.org/>), giving students access to a wealth of cultural institutions within a short walking distance from campus.

Students at CWRU and CIM also benefit from our active collaborations with the Baker-Nord Center for the Humanities (<https://bakernord.case.edu/>), the Cleveland Orchestra (<https://www.clevelandorchestra.com/>), the Rock and Roll Hall of Fame and Museum (<https://www.rockhall.com/>), the Cleveland Museum of Art (<http://www.clevelandart.org/>), the Music Settlement (

www.themusicsettlement.org/), and other local cultural and educational institutions.

Details about our practice rooms, operating hours, general usage guidelines, building access, etc., can be found on the Department of Music Facilities (<https://music.case.edu/about/facilities/>) webpage.

Department Faculty

David J. Rothenberg, PhD
(Yale University)

Associate Professor and Chair
Medieval and Renaissance music

Julie Andrijeski, DMA
(Case Western Reserve University)
Senior Instructor; Artistic Coordinator of Historical Performance Ensembles
Historical performance; dance

L. Peter Bennett, D Phil
(Oxford University)
Associate Professor; Head of Historical Performance Practice
17th-century French music; historical performance

Francesca Brittan, PhD
(Cornell University)
Associate Professor
19th-century France; Romantic aesthetics; popular music

Eric Charnofsky, MM
(The Juilliard School)
Instructor; Coordinator of Undergraduate Studies in Music (BA); Coordinator of Undergraduate Enrollment
20th-century music; collaborative piano; keyboard ensemble

Georgia J. Cowart, PhD
(Rutgers University)
Professor; Coordinator of Graduate Studies in Musicology
17th and 18th centuries; music, the arts, and politics

Paul S. Ferguson, MM
(Eastman School of Music)
Senior Instructor
Jazz studies and arranging

Matthew L. Garrett, PhD
(Florida State University)
Associate Professor; Coordinator of Undergraduate Studies in Music Education (BS); Director, University Center for Innovation in Teaching and Education (UCITE)
Music teacher education; choral music education

Daniel Goldmark, PhD
(University of California, Los Angeles)
Professor; Head of Popular Music Studies; Director of the Center for Popular Music Studies
American popular music; film music; history of the music industry

Benjamin C. Helton, PhD
(University of Illinois)
Assistant Professor; Director of Spartan Marching Band
Music teacher education; instrumental music education

Kathleen A. Horvath, PhD
(The Ohio State University)
Professor; Director of Orchestras
Music teacher education; string education and pedagogy

Lisa Huisman Koops, PhD
(Michigan State University)
Professor; Head of Music Education; Coordinator of Graduate Studies in Music Education
Music teacher education; general music; early childhood music

Nathan B. Kruse, PhD
(Michigan State University)
Associate Professor
Music teacher education; research methods

Susan McClary, PhD
(Harvard University)
Fynette H. Kulas Professor of Music; Head of Musicology
16th- and 17th-century music; cultural criticism; music theory and analysis; 21st-century opera

Ryan Scherber, PhD
(Florida State University)
Assistant Professor; Director of Bands
Music teacher education; instrumental education; quantitative research methods

Robert Walser, PhD
(University of Minnesota)
Professor
American music; jazz history; popular music studies; contemporary music production technology

Undergraduate Programs Majors

The Department of Music offers majors in music (a BA degree in the College of Arts and Sciences or a BS degree in a unit other than the college with music as a secondary major) 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 of Music website (<http://music.case.edu/>).

Double Major, Dual-Degree, and Secondary Major Opportunities. The department encourages qualified students to consider a double major in music and another BA degree program. Most music majors at CWRU also pursue a second major. Once the SAGES and General Education Requirements have been met, a BA student can add another major within the College of Arts and Sciences by meeting the course and credit unit 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 (College of Arts and Sciences) with the BS in engineering (School of Engineering). All admissions requirements must be met for each school, and course and credit unit 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.

Finally, students completing a BS in a unit other than the College of Arts and Sciences (for example, a BS in engineering) can choose music as a secondary major within that BS degree. Students pursuing music as a secondary major only need to meet the SAGES and General Education Requirements of the school in which they are earning their degree.

Bachelor of Arts in Music (BA) or a BS degree with a secondary major in music

The BA in Music is for students who wish to achieve a high level of musical skill and knowledge by majoring in music within the context of a liberal arts education. This group includes students who plan to pursue graduate study or careers in music as well as those who plan careers in other fields. All students have the option of completing a Music Capstone, an individually designed project that is usually built around a senior recital or research thesis. After completing the BA in Music, students are able to do the following:

- Demonstrate technical and artistic proficiency on a primary performance medium (instrument or voice)
- Contribute positively to musical ensembles of various sizes and types, and collaborate effectively with fellow ensemble members and ensemble directors
- Demonstrate facility with the major concepts and techniques of tonal and post-tonal music theory and analysis
- Demonstrate familiarity with the major musicians, musical thinkers, musical styles, techniques, procedures, and cultural trends of all periods in the history of Western music
- Draw on knowledge and skills in performance, music theory, music history, and/or music education to write a substantial critical assessment of musical works, concepts, and/or practices in the Western classical and/or popular traditions

This program requires that 43–51 of the credit units necessary for the degree be devoted to music study.

Requirements for the major in music:

Applied Music

Private instruction on primary instrument in sequence (department consent required):		
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 30	BA Performance Exit Jury Examination	0

Recital Class component required (auto-enrolled) with each principal performance area. Participation in weekly Recital Class (W 3:20-4:10pm), including a performance one per academic year required.

Ensembles

Eight semesters of ensemble participation for 0–1 credits each, of which six semesters must be a Primary Ensemble designated for the student's primary instrument.¹

Primary Ensembles:

MUEN 385	Case/University Circle Orchestra (Strings)	0-8
MUEN 383	Symphonic Winds (Winds/Percussion)	
MUEN 382	Case Concert Choir (Voice)	
MUEN 389	Keyboard Ensemble (Piano)	
MUEN 355	Miscellaneous Ensembles (Guitar)	
MUEN 395	Collegium Musicum (Historical Performance Practice)	
MUEN 396	Early Music Singers (Historical Performance Practice)	
MUEN 397	Baroque Orchestra (Historical Performance Practice)	
MUEN 370	Popular Music Ensemble (Popular Music)	

Additional Ensembles (two semesters, one full year):

MUEN 324	Case Percussion Ensemble
MUEN 371A	Klezmer Music Ensemble
MUEN 371B	Klezmer Music Ensemble
MUEN 373	Jazz Ensemble I
MUEN 374	Jazz Ensemble II
MUEN 380A	Case Men's Glee Club
MUEN 380B	Case Men's Glee Club
MUEN 384	Spartan Marching Band
MUEN 386	Case Camerata Chamber Orchestra
MUEN 388A	University Chorale
MUEN 388B	University Chorale
MUEN 393	Baroque Chamber Ensembles
MUEN 394	Baroque Dance Ensemble
MUEN 355	(Woodwind & Brass Chamber Music or studio classes in flute, guitar, horn, saxophone)

Music Theory and Eurhythmics

MUTH 101	Theory and Aural Skills I	4
or MUTH 101I	Intensive Theory and Aural Skills 1	
Students who do not place into MUTH 101 must take MUTH 101I.		
MUTH 102	Theory and Aural Skills II	4
MUTH 201	Theory and Aural Skills III	4
MUTH 202	Harmony-Keyboard IV	4
MUDE 101	Eurhythmics I	0
MUDE 102	Eurhythmics II	0

Music History

MUHI 201	History of Western Music I ^{pre-req} MUTH 102	3
MUHI 202	History of Western Music II ^{pre-req} MUHI 201	3

Music Electives

9

Music majors must take 9 credit units of elective courses drawn from the Electives table below.

Total Units 43-51

¹ The faculty may place you in an alternate primary ensemble in certain semesters (see the Music Undergraduate Student Handbook (<https://music.case.edu/undergraduate-handbooks/>)). The two additional semesters may be any combination of primary ensembles or one or more additional ensembles.

Electives (Music Major)

MUHI at 300 level or higher

MUHI 309	Christian Music: Historical and Global Perspectives	3
MUHI 310	Music Cultures of the World	3
MUHI 312	History and Analysis of Rock and Roll	3
MUHI 313	American Popular Song to 1950	3
MUHI 314	Blues Histories and Cultures	3
MUHI 315	History of Jazz and American Popular Music	3
MUHI 316	The Lemonade Class: Religion, Race, Sex and Black Music	3
MUHI 320	Global Pop	3
MUHI 326	The Holocaust and the Arts	3
MUHI 341	Introduction to Historical Performance Practice	3
MUHI 342	Seminar in Historical Performance Practice	3
MUHI 350	Topics in Music History	3
MUHI 390	Undergraduate Seminar in Music History	3
MUHI 395A	Capstone for Music Majors A	2
MUHI 395B	Capstone for Music Majors B	1 - 4

MUTH at 300 level

MUTH 311	16th Century Counterpoint	2
MUTH 312	Eighteenth Century Counterpoint	3
MUTH 319	Jazz Skills	3
MUTH 320	Form and Analysis	3
MUTH 390	Music Theory Literature Review	2

General Musicianship

MUGN 308	Digital Music: Composition and Production	3
----------	---	---

Music Education

MUED 240	Foundations of Music Education	3
MUED 275	Elements of Conducting (instructor permission required)	3
MUED 276	Advanced Conducting, Score Analysis and Rehearsal Techniques (instructor permission required)	3
MUED 310	Instrumental and Choral Arranging	3
MUED 391	Music in Early Childhood	3

Skills and Pedagogy

instructor permission required		
MUED 200A	Basic Skills and Pedagogy: Voice	2

MUED 200B	Basic Skills and Pedagogy: Guitar	2
MUED 200C	Basic Skills and Pedagogy: Brass	2
MUED 200E	Basic Skills and Pedagogy: Clarinet and Saxophone	2
MUED 200F	Basic Skills and Pedagogy: Double Reeds and Flute	2
MUED 200H	Basic Skills and Pedagogy: Strings	2
MUED 200J	Basic Skills & Pedagogy: Piano for Music Educators	2
MUED 200P	Basic Skills and Pedagogy: Percussion	2

Capstone & Departmental Honors

The Capstone in Music (MUHI 395A Capstone for Music Majors A and MUHI 395B Capstone for Music Majors B) is not required, but if taken, counts as a music history elective, and qualifies students for Departmental Honors. Music majors who maintain a GPA of 3.75 or above in the major, and who complete an ambitious and outstanding Music Capstone project, can earn Departmental Honors by music faculty nomination and vote. This distinction appears on the transcript, is announced at commencement, and is printed in the commencement program.

BS in Music Education

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 127 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 teacher 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; Eurhythmics:		
MUTH 101	Theory and Aural Skills I	4
or MUTH 101I	Intensive Theory and Aural Skills I	
Students who do not place into MUTH 101 must take MUTH 101I.		
MUTH 102	Theory and Aural Skills II	4
MUTH 201	Theory and Aural Skills III	4
MUTH 202	Harmony-Keyboard IV	4
MUDE 101	Eurhythmics I (fulfills SAGES Phys Ed requirement)	0
MUDE 102	Eurhythmics II (fulfills SAGES Phys Ed requirement)	0

Music History/Literature (must be taken in sequential order):

MUHI 201	History of Western Music I (fulfills CAS Arts and Humanities requirement) <small>pre-req MUTH 102</small>	3
MUHI 202	History of Western Music II (fulfills CAS Arts and Humanities requirement) <small>pre-req MUHI 201</small>	3
MUED 305	World Music in Education (fulfills SAGES Global and Cultural Diversity requirement)	3
Applied Music (primary lessons every semester except student teaching, department consent required):		
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
Recital Class component required (auto-enrolled) with each principal performance area. Participation in weekly Recital Class (W 3:20-4:10pm), including a performance one per academic year required.		
Ensembles		9
Primary Ensembles (every semester except student teaching):		
MUEN 382	Case Concert Choir (Voice)	
MUEN 383	Symphonic Winds (Winds/Percussion)	
MUEN 385	Case/University Circle Orchestra (Strings)	
MUEN 389	Keyboard Ensemble (Piano)	
MUEN 355	Miscellaneous Ensembles (Guitar)	
MUEN 395	Collegium Musicum (Historical Performance Practice)	
MUEN 396	Early Music Singers (Historical Performance Practice)	
MUEN 397	Baroque Orchestra (Historical Performance Practice)	
MUEN 370	Popular Music Ensemble (Popular Music)	
Additional Ensembles (two semesters, one full year): ¹		
MUEN 324	Case Percussion Ensemble	
MUEN 371A	Klezmer Music Ensemble	
MUEN 371B	Klezmer Music Ensemble	
MUEN 373	Jazz Ensemble I	
MUEN 374	Jazz Ensemble II	
MUEN 380A	Case Men's Glee Club	
MUEN 380B	Case Men's Glee Club	
MUEN 384	Spartan Marching Band	
MUEN 386	Case Camerata Chamber Orchestra	

MUEN 388A	University Chorale	
MUEN 388B	University Chorale	
MUEN 393	Baroque Chamber Ensembles	
MUEN 394	Baroque Dance Ensemble	
B. Music Education Sequence		
Methods: ²		
MUED 240	Foundations of Music Education	3
MUED 320	Technology Assisted Music Teaching and Learning	3
MUED 350	General Music Methods	3
MUED 355	Vernacular Music in Education (fulfills SAGES Departmental Seminar requirement)	3
MUED 352	Instrumental Methods and Materials	3
or MUED 353	Choral Methods and Materials	
Conducting and Arranging:		
MUED 275	Elements of Conducting	3
MUED 276	Advanced Conducting, Score Analysis and Rehearsal Techniques	3
MUED 310	Instrumental and Choral Arranging	3
Basic Skills & Pedagogy: ²		
MUED 200A	Basic Skills and Pedagogy: Voice	
MUED 200B	Basic Skills and Pedagogy: Guitar	
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 200J	Basic Skills & Pedagogy: Piano for Music Educators	
MUED 200P	Basic Skills and Pedagogy: Percussion	
MUED 220	Marching Band Techniques	
Field Experience (two semesters):		
MUED 300	Intensive Field Experience (taken in sixth and seventh semester)	0
Student Teaching:		
MUED 396A	Student Teaching in Music Education	9
MUED 396B	Student Teaching Seminar in Music Education (counts as Music Education Capstone)	3
C. Professional Education Courses		
PSCL 101	General Psychology I	3
EDUC 301	Introduction to Education	3
EDUC 304	Educational Psychology (fulfills CAS Social Science requirement) ³	3
EDUC 255	Literacy Across the Content Areas	3
Total Units		108

¹ The two additional semesters may be any combination of primary ensembles or one or more additional ensembles.

² See the required methods and secondary instrument courses by music education focus area (chart 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	3
----------	------------------------------	---

Required Secondary Instruments

MUED 200A	Basic Skills and Pedagogy: Voice	2
MUED 200B	Basic Skills and Pedagogy: Guitar	2
MUED 200H	Basic Skills and Pedagogy: Strings	2
MUED 200J	Basic Skills & Pedagogy: Piano for Music Educators	2
MUED 200P	Basic Skills and Pedagogy: Percussion	2

Plus at least one of the following:

MUED 200C	Basic Skills and Pedagogy: Brass	2
MUED 200E	Basic Skills and Pedagogy: Clarinet and Saxophone	2
MUED 200F	Basic Skills and Pedagogy: Double Reeds and Flute	2

Instrumental Focus- Winds/Percussion

Required Methods Specialization Class

MUED 352	Instrumental Methods and Materials	3
----------	------------------------------------	---

Secondary Instruments

Instrumental (winds/percussion) students should discuss course options with their academic advisor, particularly for students whose primary instrument is included in one of the 200-level courses.

MUED 200A	Basic Skills and Pedagogy: Voice	2
MUED 200C	Basic Skills and Pedagogy: Brass	2
MUED 200E	Basic Skills and Pedagogy: Clarinet and Saxophone	2
MUED 200F	Basic Skills and Pedagogy: Double Reeds and Flute	2
MUED 200H	Basic Skills and Pedagogy: Strings	2
MUED 200J	Basic Skills & Pedagogy: Piano for Music Educators	2
MUED 200P	Basic Skills and Pedagogy: Percussion	2

Recommended as optional electives:

MUED 200B	Basic Skills and Pedagogy: Guitar	2
MUED 220	Marching Band Techniques	1

Instrumental Focus- Strings

Required Methods Specialization Class

MUED 352	Instrumental Methods and Materials	3
----------	------------------------------------	---

Secondary Instruments

MUED 200A	Basic Skills and Pedagogy: Voice	2
MUED 200C	Basic Skills and Pedagogy: Brass	2

MUED 200H	Basic Skills and Pedagogy: Strings	2
MUED 200J	Basic Skills & Pedagogy: Piano for Music Educators	2
MUED 200P	Basic Skills and Pedagogy: Percussion	2

Plus at least one of the following:

MUED 200B	Basic Skills and Pedagogy: Guitar	2
MUED 200E	Basic Skills and Pedagogy: Clarinet and Saxophone	2
MUED 200F	Basic Skills and Pedagogy: Double Reeds and Flute	2

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 action 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 or after the completion of MUED 240. 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 student and 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 student and 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 score on the Candidate Disposition Assessment Inventory completed by the student and 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-reflective 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 student and 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
MUED 496A & MUED 496B	Student Teaching in Music Education and Student Teaching Seminar in Music Education (for master's students seeking licensure)	12

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 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. 369) section in this bulletin.

Departmental Honors

Music education majors who maintain a GPA of 3.75 or above in the major and who receive a high score on their Teacher Work Sample (TWS) from the music education faculty, can earn Departmental Honors by vote of the music faculty. The distinction appears on the transcript, is announced at commencement, and is printed in the commencement program.

Minor in Music

Music Theory	6
MUTH 103	Theory I
MUTH 104	Theory II
Music History or Appreciation	6
Any two 3-credit courses drawn from MUHI or MUGN.	
Electives	3
Any 3 credits in MUGN, MUHI, MUAP (applied lessons) or MUEN (ensembles).	
MUAP and MUEN courses may be taken for 1 or 2 credits each and can be used in any combination to fulfill this requirement. MUAP courses require an applied lesson fee.	
Total Units	15

Note that credit earned through AP Music Theory or CIM Music Theory proficiency examination does not reduce the overall 15-credit hour requirement for the minor. The additional 3 credits may be taken in MUTH, MUHI or MUGN.

CIM students may pursue a minor in music history by taking 15 credit units 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 Department Coordinator of Undergraduate Studies.

Electives for Non-Music Majors

Electives designed for students not majoring in music:

Applied Music

MUAP 131	Secondary Performance	1 - 2
Applied music lessons for students not majoring in music are available with consent of the department (additional fee). For more information about studio offerings, please visit the Department of Music website or contact the music office.		

Music Ensembles

MUEN courses are open to all students. Most require an audition. For more information, visit the Department of Music website or contact the individual ensembles director.		
MUEN 324	Case Percussion Ensemble	0 - 2
MUEN 355	Miscellaneous Ensembles	0 - 2
MUEN 370	Popular Music Ensemble	0 - 1

MUEN 371A	Klezmer Music Ensemble	0
MUEN 371B	Klezmer Music Ensemble	1
MUEN 373	Jazz Ensemble I	0 - 1
MUEN 374	Jazz Ensemble II	0 - 1
MUEN 380A	Case Men's Glee Club	0
MUEN 380B	Case Men's Glee Club	1
MUEN 382	Case Concert Choir	0 - 1
MUEN 383	Symphonic Winds	0 - 1
MUEN 384	Spartan Marching Band	0 - 1
MUEN 385	Case/University Circle Orchestra	0 - 1
MUEN 386	Case Camerata Chamber Orchestra	0 - 1
MUEN 388A	University Chorale	0
MUEN 388B	University Chorale	1
MUEN 389	Keyboard Ensemble	0 - 1
MUEN 393	Baroque Chamber Ensembles	0 - 1
MUEN 394	Baroque Dance Ensemble	0 - 1
MUEN 395	Collegium Musicum	0 - 1
MUEN 396	Early Music Singers	0 - 1
MUEN 397	Baroque Orchestra	0 - 1
Music Theory		
MUTH 103	Theory I	3
MUTH 104	Theory II	3
Music History or Appreciation		
MUGN 201	Introduction to Music: Listening Experience I	3
MUGN 212	History of Rock and Roll	3
MUGN 220	Composers of the Musical on Stage and Screen	3
MUGN 308	Digital Music: Composition and Production	3
MUGN 310	Russian Song	1

Music Undergraduate Student Handbook and Advising Forms

Current undergraduate music majors should track their progress in all performance and course requirements (including general education requirements) on the Advising Forms for Music Degree Programs (<https://music.case.edu/advising-forms-for-music-degree-programs/>) provided to them during orientation. Undergraduate music education majors are also provided suggested Music Education 4-Year Plans (<https://music.case.edu/advising-forms-for-music-degree-programs/>).

The Music Undergraduate Student Handbook (<https://music.case.edu/undergraduate-handbooks/>) provides departmental information regarding faculty/staff personnel, advisors, resources, facilities, forms, competitions, honors and awards, accompanists, juries, recitals, and student organizations.

The Department of Music offers graduate programs in the following areas of study:

Historical Performance Practice

MA in Historical Performance Practice
DMA in Historical Performance Practice

Music Education

MA in Music Education
MA in Music Education for Teacher Licensure
PhD in Music Education

Musicology

MA in Music History
PhD in Musicology

Admission to each degree program follows established guidelines of the School of Graduate Studies (<https://case.edu/gradstudies/>). The Graduate Admission (<https://music.case.edu/prospective-graduate-students/general-information-for-perspective-graduate-students/>) section of the Department of Music website provides more information about the individual degree programs, fellowship opportunities, and application procedures.

MA in Historical Performance Practice

This program in early music (up to 1850) combines advanced study in performance, music history, and performance practices. Students should expect to spend two years in full-time study. Admission to the program is granted to those who demonstrate a high level of early music performance skills and good scholarship potential. An audition is required.

Degree Overview

The MA is a two-year degree that requires 21 credit units of coursework, together with 12 units of applied music, proficiency in one relevant foreign language, a jury, and a lecture recital in the second year (3 units).

Coursework and Applied Music

Coursework must include MUHI 610 Research Methods in Music, MUHI 441 Introduction to Historical Performance Practice, MUHI 443 Medieval/Renaissance Notation or MUTH 416 Pre-common Practice Theory and Analysis, and at least two seminars in MUHI 442 Seminar in Historical Performance Practice. Students are also expected to attend MUAP 698 Historical Performance Practice Studio Class each semester of study.

Ensemble Participation and Outside Engagements

Two or more early music ensembles are required each semester (MUEN). Students are encouraged to take outside engagements that will contribute to their professional development, but any engagements that might have a significant impact on class attendance, TA/RA duties, or ensemble participation must be cleared by the HPP committee. See the Music Graduate Student (<https://music.case.edu/graduate-handbooks/>) Handbook (<https://music.case.edu/graduate-handbooks/>) for the policy to request an absence for an outside engagement.

Jury

A jury is required in the spring of the first year (MUAP 600 Historical Performance Progress Jury). The program should be decided in consultation with the student's applied teacher and should consist of approximately 15 minutes of music. The jury will consist of the applied teacher with at least two other HPP faculty. If the performance is unsatisfactory, the student will have the opportunity to repeat the jury the following semester. If the second attempt is also unsatisfactory, the student will not be allowed to continue in the degree program.

Foreign Languages

Students must demonstrate the ability to read one language approved by the HPP committee as relevant to the student's research (generally

drawn from German, French, Italian, and Latin, though exceptions can be made). For more details, see "Language Examinations" under the PhD requirements.

The minimum required level of reading ability is usually attained by the equivalent of two years of college-level study of the language plus further reading in musical and musicological writings in the language.

Lecture-Recital and Document

One juried lecture-recital is required, taken in the spring of the second year (MUAP 651 M.A. Lecture - Recital and Document M.A. Lecture - Recital and Document) at 3 credit units. The lecture-recital consists of a 45-minute performance generally preceded by a 30-45 minute researched-based lecture dealing with the musical, historical and performance practice issues relevant to the chosen repertoire. The entire lecture-recital should not exceed 90-minutes. See the Music Graduate Student Handbook (<https://music.case.edu/graduate-handbooks/>) for the policy to submit a proposal, prepare for the lecture-recital, and to complete the accompanying document.

Degree Overlap

Students in the MA in HPP program who wish to continue on to the DMA may audition after three semesters of study. If successful, coursework already completed will count toward the DMA requirements. A student who graduates with an MA in HPP, but who subsequently wishes to return to the program, may, if readmitted, continue on to the DMA by completing the remaining DMA requirements (typically the final two years of the degree).

Course Distribution

Historical Performance Practice 12

MUHI 610	Research Methods in Music
MUHI 441	Introduction to Historical Performance Practice
MUHI 442	Seminar in Historical Performance Practice (two courses required)

Notation or Pre-Tonal Theory 3

MUHI 443	Medieval/Renaissance Notation
or MUTH 416	Pre-common Practice Theory and Analysis

Music History/HPP Electives 6

May include any of the following:

MUHI 431, MUHI 432, MUHI 433, MUHI 434, MUHI 435, MUHI 436	
MUHI 450	Topics in Music History
MUHI 590	Seminar in Musicology
MUHI 501	Special Reading (M.A. and M.M.) (by special arrangement)

Applied Music and Ensembles 12

MUAP 500	Applied Music/Ensembles (taken each semester to reflect participation in multiple ensembles)
Primary Lessons:	
MUAP 521	Principal Performance Area IX
MUAP 522	Principal Performance Area IX
MUAP 523	Principal Performance Area IX
MUAP 524	Principal Performance Area IX
Secondary Lessons (optional):	
MUAP 531	Secondary Performance (0 credit units)

Jury:	
MUAP 600	Historical Performance Progress Jury (required in the spring of the first year)
Studio Class:	
MUAP 698	Historical Performance Practice Studio Class (taken each semester)
Two HPP ensembles each semester:	
MUEN 393	Baroque Chamber Ensembles
MUEN 394	Baroque Dance Ensemble
MUEN 395	Collegium Musicum
MUEN 396	Early Music Singers
MUEN 397	Baroque Orchestra
Lecture-Recital	3
MUAP 651	M.A. Lecture - Recital and Document (given in the spring of the second year)
Students may register for the lecture preparation in either the fall or spring semester.	
Foreign Language	
Proficiency in one relevant foreign language.	
Total Units	36

Sample Plan of Study

First Year	Units	
	Fall	Spring
Research Methods in Music (MUHI 610)	3	
Introduction to Historical Performance Practice (MUHI 441)	3	
Applied Music and Ensembles	3	
Seminar in Historical Performance Practice (MUHI 442)		3
Music History (MUHI 431-6/450/590)		3
Applied Music and Ensembles		3
Historical Performance Progress Jury (MUAP 600)		0
Year Total:	9	9
Total Units in Sequence:		18

Second Year	Units	
	Fall	Spring
Seminar in Historical Performance Practice (MUHI 442)	3	
M.A. Lecture - Recital and Document (MUAP 651) (for presentation in the spring)	3	
Applied Music and Ensembles	3	
Medieval/Renaissance Notation (MUHI 443) or Pre-common Practice Theory and Analysis (MUTH 416)		3
Music History (MUHI 431-6/450/590)		3
Applied Music and Ensembles		3
Lecture-Recital Performance		
Year Total:	9	9

Total Units in Sequence: 18

DMA in Historical Performance Practice

This program in early music (up to 1850) combines advanced study in performance, music history, and performance practices. Admission to the program is granted to those who demonstrate the potential to be leaders in the field of early music: candidates are expected to show excellent scholarly potential in music history and performance practices, and demonstrate a high level of performance skill. Students are admitted by audition and interview, and are required to take an initial placement test in music history and theory on matriculation.

Degree Overview

The DMA is a four-year degree. A minimum of 33 credit units of academic coursework is required together with a minimum of 18 units of applied music, proficiency in two relevant foreign languages, a jury, a recital and the first lecture-recital (3 credit units), all to be completed during the first three years of the degree. Qualifying examinations are taken early in the fall of the fourth year: after the successful completion of these examinations, the student will advance to candidacy and prepare and perform the second lecture-recital (6 units) by the end of the fourth year. (Students may also take academic classes during this year, but are not required to.)

Coursework and Applied Music

Coursework must include MUHI 610 Research Methods in Music, MUHI 441 Introduction to Historical Performance Practice, MUHI 443 Medieval/Renaissance Notation, MUTH 416 Pre-common Practice Theory and Analysis, and at least three seminars in MUHI 442 Seminar in Historical Performance Practice. Electives may include topics courses (MUHI 450 Topics in Music History), musicology seminars (MUHI 590 Seminar in Musicology), or independent study courses by special arrangement (MUHI 601 Special Readings Ph.D./D.M.A.). Students are also expected to attend MUAP 698 Historical Performance Practice Studio Class.

Ensembles and Outside Engagement

Two or more early music ensembles are required each semester (MUEN). Students are encouraged to take outside engagements that will contribute to their professional development, but any engagements that might have a significant impact on class attendance, TA/RA duties, or ensemble participation must be cleared by the HPP committee. See the Music Graduate Student Handbook (<https://music.case.edu/graduate-handbooks/>) for the policy to request an absence for an outside engagement.

Jury

A jury is required in the spring of the first year (MUAP 600). The program should be decided in consultation with the student's applied teacher and should consist of approximately 15 minutes of music. The jury will consist of the applied teacher with at least two other HPP faculty. If the performance is unsatisfactory, the student will have the opportunity to repeat the jury the following semester. If the second attempt is also unsatisfactory, the student will not be allowed to continue in the degree program.

Foreign Languages

Students must demonstrate the ability to read two languages approved by the HPP committee as relevant to the student's research (generally drawn from German, French, Italian, and Latin, though exceptions

can be made). See the Music Graduate Student Handbook (<https://music.case.edu/graduate-handbooks/>) for more details.

Lecture-Recitals and Document

Two juried lecture-recitals are required: MUHI 751 (3 credit units), taken no earlier than the spring of the second year and MUHI 753 taken in the spring of the fourth year (6 units, 3 each in the fall and spring semesters). The lecture-recital consists of a 45-minute performance generally preceded by a 30-45 minute researched-based lecture dealing with the musical, historical and performance practice issues relevant to the chosen repertoire. The entire lecture-recital should not exceed 90-minutes. See the **Music Graduate Student Handbook** for the policy to submit a proposal, prepare for the lecture-recital, and complete the accompanying document.

Recital

A juried recital is required by the end of the third year, MUAP 700 (0 credit units). The recital (50-60 minutes) should feature works from a variety of national school and periods, and should showcase the student's solo performing abilities: the program will be decided in consultation with the applied teacher and HPP advisor, and must be approved by the HPP committee. See the **Music Graduate Student Handbook** for the policy to submit a proposal, prepare for the recital.

Qualifying Examinations

Qualifying examinations are taken at the beginning of the fourth year. See the **Music Graduate Student Handbook** for detailed information.

Historical Performance Practice 33-39

MUHI 610	Research Methods in Music
MUHI 441	Introduction to Historical Performance Practice
MUHI 442	Seminar in Historical Performance Practice (three required)

Notation and Pre-Tonal Theory

MUHI 443	Medieval/Renaissance Notation
MUTH 416	Pre-common Practice Theory and Analysis

Music History/HPP Electives

May include any of the following:	
MUHI 431, MUHI 432, MUHI 433, MUHI 434, MUHI 435, MUHI 436	
MUHI 450	Topics in Music History
MUHI 590	Seminar in Musicology
MUHI 601	Special Readings Ph.D./D.M.A. (by special arrangement)

Recital

MUAP 700	Historical Performance Recital (required by the end of third year)
----------	--

Lecture-Recital

MUHI 751	Recital Document I - D.M.A.	3
MUHI 753	Recital Document III-D.M.A.	6

The 6 units of MUHI 753 can be split across two semesters.

Applied Music and Ensembles 18-24

Students are required to take 3 credit units of applied music lessons and ensembles every semester.

MUAP 500	Applied Music/Ensembles (taken each semester for 1 credit unit to reflect participation in multiple ensembles)
Primary Lessons (2 credit units):	
MUAP 521	Principal Performance Area IX
MUAP 522	Principal Performance Area IX
MUAP 523	Principal Performance Area IX
MUAP 524	Principal Performance Area IX
MUAP 525	Principal Performance Area IX
MUAP 526	Principal Performance Area IX
Secondary Lessons (optional):	
MUAP 531	Secondary Performance
Jury:	
MUAP 600	Historical Performance Progress Jury (required in the spring of the first year)
Studio Class:	
MUAP 698	Historical Performance Practice Studio Class (taken each semester)
Ensembles:	
MUEN 393	Baroque Chamber Ensembles
MUEN 394	Baroque Dance Ensemble
MUEN 395	Collegium Musicum
MUEN 396	Early Music Singers
MUEN 397	Baroque Orchestra
Foreign Language	
Proficiency in two relevant foreign languages.	
Total Units	60-72

MA in Music Education

This program is for individuals with an undergraduate degree in Music Education, a teaching certificate/license, and at least one year of successful music classroom teaching experience, who wish to pursue further academic study as a means to develop professionally. Coursework combines the study of philosophical, research-based, and theoretical positions of teaching and learning music with pragmatic approaches to improving music learning. Additional courses and independent studies enable students to tailor programs to their interests and needs, while maintaining standard of musical and scholarly excellence.

The MA in Music Education has two options for final project:

Plan A (thesis and oral defense)

Students write a thesis based on original research and defend the thesis in an oral examination. Students in Plan A receive 6 credit units for thesis research.

Plan B (comprehensive written examination and oral defense)

Students complete a comprehensive examination in music education at the conclusion of coursework.

Applicants for Plans A or B should have an undergraduate degree in music education with a GPA of 3.0 or better and at least one year of successful music teaching experience, usually in the public schools.

A minimum of 30 credit units is required for Plan A and Plan B. MA students may take 300-level classes provided that 18 credit units of 400-level courses have been completed (faculty approval required).

Summary of MA in Music Education (Plan A, thesis)

Graduate music education core (Plan A)		15
MUED 440	Scholarship in Music Education	
MUED 441	Philosophical Foundations of Music Education	
MUED 442	Curriculum and Assessment in Music Education	
MUED 443	Music Cognition and Learning	
MUED 640	Qualitative Research in Music Education	
or MUED 641	Quantitative Research Methods in Music Education	
Graduate Music Core		9
MUTH 422	Musical Analysis for Educators	
MUHI 430	Music History for Educators	
Additional course in theory (MUTH), history (MUHI), and/or performance (MUAP or MUEN).		
Thesis		6
MUED 651	Thesis (M.A. and M.M.)	
Total Units		30

Summary of MA in Music Education (Plan B, comprehensive exams)

Graduate Music Education Core (Plan B)		12
MUED 440	Scholarship in Music Education	
MUED 441	Philosophical Foundations of Music Education	
MUED 442	Curriculum and Assessment in Music Education	
MUED 443	Music Cognition and Learning	
Graduate Music Core		9
MUTH 422	Musical Analysis for Educators	
MUHI 430	Music History for Educators	
Additional courses in theory (MUTH), history (MUHI), and/or performance (MUAP or MUEN).		
Electives		6
Music education courses, seminars, and independent studies suited to the student's interests and approved by the music faculty.		
Degree Credit		3
One additional core or elective course to meet the minimum of 30 credit units required to earn the MA in Music Education.		
Comprehensive Exam		0
Total Units		30

MAL in Music Education

Plan C (MA for Licensure, or MAL)

The MAL option is for students with an undergraduate degree in music who wish to obtain a licensure to teach music in the public schools while simultaneously pursuing graduate study in music education. Applicants for the MAL should have an undergraduate degree in music (BA or BM)

with a GPA of 3.0 or better and some prior experience in working with children.

Course requirements span six semesters and combine core graduate music and music education courses (30 credit units), licensure courses (31 credit units), with student teaching (12 credit units). 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.

Plan C requires a minimum of 73 credit units. Classes at the 200-level, while required for teacher licensure, do not count toward the graduate degree and therefore are not included in GPA calculations. However, they do appear on the transcript with a grade and serve to satisfy the academic requirements for licensure. MAL students may take 300-level classes provided that 18 credit units of 400-level courses have been completed (faculty approval required).

To remain in the MAL program, students must meet GPA and professional standards each year. Please review the Music Graduate Student Handbook (<https://music.case.edu/graduate-handbooks/>) for more information.

Summary of MAL in Music Education (Plan C)

Music Education Licensure Area

43

Methods

MUED 410	Professional Music Education: A Career Introduction
MUED 400	Intensive Field Experience
MUED 420	Technology Assisted Music Teaching and Learning
MUED 305	World Music in Education
MUED 350	General Music Methods
MUED 352	Instrumental Methods and Materials
or MUED 353	Choral Methods and Materials
MUED 355	Vernacular Music in Education
MUED 275	Elements of Conducting

Secondary Instrument Classes (6 of 8 are required): ^{see the} required methods for choral, instrumental, and general focus (BS Music Education)

MUED 200A	Basic Skills and Pedagogy: Voice
MUED 200B	Basic Skills and Pedagogy: Guitar
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 200J	Basic Skills & Pedagogy: Piano for Music Educators
MUED 200P	Basic Skills and Pedagogy: Percussion

Student Teaching

MUED 496A	Student Teaching in Music Education
-----------	-------------------------------------

MUED 496B	Student Teaching Seminar in Music Education
Teacher Licensure Professional Education Core	
EDUC 301	Introduction to Education
EDUC 304	Educational Psychology
EDUC 255	Literacy Across the Content Areas
Graduate Music Education Core	
MUED 440	Scholarship in Music Education
MUED 441	Philosophical Foundations of Music Education
MUED 442	Curriculum and Assessment in Music Education
MUED 443	Music Cognition and Learning
Graduate Music Core	
MUTH 422	Musical Analysis for Educators
MUHI 430	Music History for Educators
One additional course in theory (MUTH), history (MUHI), and/or performance (MUAP or MUEN).	
Successful completion of comprehensive exam	
Total Units	73

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 qualifying examination follows the completion of coursework, 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.

A total of 60 credit units is required for the doctoral degree beyond the master's level.

Summary of PhD in Music Education

Graduate Music Education Core		15
MUED 440	Scholarship in Music Education	
MUED 441	Philosophical Foundations of Music Education	
MUED 442	Curriculum and Assessment in Music Education	
MUED 443	Music Cognition and Learning	
MUED 640	Qualitative Research in Music Education	
MUED 641	Quantitative Research Methods in Music Education	

Graduate Music Core	9
MUTH 422 Musical Analysis for Educators	
MUHI 430 Music History for Educators	
Music Electives (additional courses in theory, history, and/or performance)	
Outside Cognate	6
Two courses in a related field, outside of music education, suited to the student's interests and needs. Faculty approval required.	
Music Education Electives	9
Music education courses, seminars, and independent studies suited to the student's interests and approved by the music faculty.	
Degree Credit	3
One additional core or elective course to meet the minimum of 60 credit units required to earn the PhD in Music Education.	
Qualifying Exams	0
Dissertation	18
MUED 701 Dissertation Ph.D.	
Total Units	60

MA in Music History

This degree emphasizes research, in the history, literature, and theory of music. The following are minimum requirements:

MUHI 610 Research Methods in Music	3
Music History (MUHI)	9
Theory-Analysis (MUTH)	3-6
Electives	9-12
MUHI 651 Thesis (M.A. and M.M.)	6
Total Units	30-36

PhD in Musicology

The PhD in 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 upon 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.

The PhD requires 36 credit units of coursework and an additional 18 credit units of dissertation research MUHI 701 Dissertation Ph.D.. Required coursework includes MUHI 610 Research Methods in Music and MUHI 612 Analysis for Music Historians, as well as three doctoral MUHI 590 Seminar in Musicology courses. In the first two years, students will be expected to take three courses (or 9 credit units) per semester, for a total of 36 units.

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 MUHI 701 Dissertation Ph.D. credits.

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. In December of each year, students will submit an Academic Progress Report (APR).

Written evaluations included as part of this report, 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 qualifying examinations. 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 MUHI 701 Dissertation Ph.D. 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 March 15 at the end of the third year of study. This document should be submitted at least two weeks prior to a prospectus defense, scheduled no later than April 1. It is expected that the fourth and fifth year of study will be devoted to work on the dissertation; during this time, students will enroll in MUHI 710 Dissertation Seminar. Upon completion of the thesis, each student will present a formal defense to the musicology faculty.

The Music Graduate Student Handbook (<http://music.case.edu/graduate-handbooks/>) outlines in detail the procedures and timeline for dissertation completion and graduation.

Course Distribution

MUHI 610 Research Methods in Music	3
MUHI 612 Analysis for Music Historians	3
MUHI 590 Seminar in Musicology (three required)	9
Electives (generally MUHI or MUTH)	21
MUHI 701 Dissertation PhD	18
Students who advance to candidacy for the PhD will register for dissertation research credits and begin research for the dissertation.	
MUHI 710 Dissertation Seminar	0
It is expected that the third, fourth and fifth year of study will be devoted to work on the dissertation; during this time students will enroll in MUHI 710.	
Total Units	54

Sample Plan of Study

First Year	Units	
	Fall	Spring
Viennese Classicism (MUHI 434)	3	
Topics in Music History (MUHI 450)	3	
Research Methods in Music (MUHI 610)	3	
TA Training (UNIV 400C)		

-first foreign language exam-

Topics in Music History (MUHI 450)	3
Seminar in Musicology (MUHI 590)	3
Analysis for Music Historians (MUHI 612)	3
Year Total:	9

Total Units in Sequence: 18

Second Year	Units	
	Fall	Spring
Medieval Music: Early Christian to 1425 (MUHI 431)	3	
Topics in Music History (MUHI 450)	3	
Seminar in Musicology (MUHI 590)	3	
-second foreign language exam-		
Topics in Music History (MUHI 450)		3
Seminar in Musicology (MUHI 590)		3
Special Readings Ph.D./D.M.A. (MUHI 601)		3
Qualifying Exam Practicum (MUHI 699)		0
Year Total:	9	9

Total Units in Sequence: 18

Third Year	Units	
	Fall	Spring
-take Qualifying Exams in August of third year-		
Dissertation Ph.D. (MUHI 701)	3	
Dissertation Seminar (MUHI 710)	0	
-write and defend dissertation prospectus by April 1 of their year-		
Dissertation PhD (MUHI 701)		3
Dissertation Seminar (MUHI 710)		0
Year Total:	3	3

Total Units in Sequence: 6

Fourth Year	Units	
	Fall	Spring
Dissertation Ph.D. (MUHI 701)	3	
Dissertation Seminar (MUHI 710)	0	
Dissertation PhD (MUHI 701)		3
Dissertation Seminar (MUHI 710)		0
Year Total:	3	3

Total Units in Sequence: 6

Fifth Year	Units	
	Fall	Spring
Dissertation Ph.D. (MUHI 701)	3	
Dissertation Seminar (MUHI 710)	0	
Dissertation PhD (MUHI 701)		3
Dissertation Seminar (MUHI 701)		0
Year Total:	3	3

Total Units in Sequence: 6

Music Graduate Student Handbook

Current students should review the Music Graduate Student Handbook (<https://music.case.edu/graduate-handbooks/>) for departmental policies regarding the following:

- personnel, facilities, resources, procedures and activities
- graduate assistantships
- general expectations and responsibilities
- teacher education: program outcomes, dispositions, decision points/timeline, retention policy
- performance, scholarly activity, outside work
- prizes, awards, grants
- calendar and deadlines
- petitions
- time limitation (*completion of degree*)
- preparation and completion of examinations (*diagnostic, language, qualifying, comprehensive, oral defense*)
- advancement to candidacy
- student recording-keeping
- residency requirements

MUAP Courses

MUAP 10. Progress Jury Examination. 0 Unit.

Progress Jury Examination (All BA and BS Music Majors)

MUAP 11. Recital Class. 0 Unit.

MUAP 20. Level 300 Applied Music Entrance Jury Exam. 0 Unit.

Level Jury Examination

MUAP 25. BA Exit Jury Examination. 0 Unit.

BA Exit Jury Examination (Audio and General Music Concentrations)

MUAP 26. BA Exit Jury Examination. 0 Unit.

BA Exit Jury Examination (Music History, Music Theory, and Early Music Performance Practice)

MUAP 30. BA Performance Exit Jury Examination. 0 Unit.

BA Performance Exit Jury Examination

MUAP 35. BS Music Education Jury Examination. 0 Unit.

BS Music Education Jury Examination

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.

Limited to music and music education majors. Prereq: MUAP 121. Coreq: MUAP 10.

MUAP 131. Secondary Performance. 1 - 2 Units.

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 221. Principal Performance Area III. 2 Units.

Limited to music and music education majors. Prereq: (MUTH 101 or 101I) and MUAP 122 and MUAP 10. Coreq: MUTH 101 or 101I.

MUAP 222. Principal Performance Area IV. 2 Units.

Limited to music and music education majors. Prereq: MUAP 221. Coreq: MUAP 20. Prereq or Coreq: MUTH 102.

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 321. Principal Level Performance Area V. 2 Units.

Limited to music and music education majors. Prereq: MUAP 222 and MUAP 20. Prereq or Coreq: MUTH 201.

MUAP 322. Principal Level Performance Area VI. 2 Units.

Limited to music and music education majors. Prereq: MUAP 321. Prereq or Coreq: 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 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 Units.

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). Graduate students in music may be advised by their program advisor to take this course for variable credit (0-3 units). The applied lesson fee is waived for all music majors. Contact the Department of Music directly for registration consent.

MUAP 600. Historical Performance Progress Jury. 0 Unit.

Historical Performance Progress Jury, generally taken at the end of the second semester.

MUAP 601. Principal Performance Lessons. 3 Units.**MUAP 602. Principal Performance Lessons. 3 Units.****MUAP 604. Principal Performance Area IV. 3 Units.****MUAP 605. DMA Principal Performance V. 3 Units.****MUAP 651. M.A. Lecture - Recital and Document. 3 - 6 Units.**

M.A. Lecture - Recital for students in Historical Performance Practice.

MUAP 698. Historical Performance Practice Studio Class. 0 Unit.

This course is intended to provide a weekly opportunity for students to perform in front of their peers, CWRU faculty, and guest coaches; to discuss and critique the performances of their colleagues; and to receive feedback and advice.

MUAP 699. Historical Performance Practicum. 0 Unit.

This course is intended to give graduate students in the historical performance practice program the opportunity to rehearse and perform in concert with a non-CWRU or professional early music ensemble, to put into practice the HPP skills and knowledge they have acquired at CWRU, and to observe and learn from professional performers and others in their field.

MUAP 700. Historical Performance Recital. 0 Unit.

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, DMA Recital Document II. 3,0 Units.****MUAP 752. Doctoral Lecture-Recital and Document II, DMA Recital Document II. 3,0 Units.****MUAP 753. Doctoral Lecture-Recital and Document III, DMA Recital Document III. 1 - 6,0 Units.****MUAP 753. Doctoral Lecture-Recital and Document III, DMA Recital Document III. 1 - 6,0 Units.****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 Unit.

Professional level work in the Case Western Reserve University Harkness audio service.

MUAR 252B. Case Audio Recording Internship II. 0 Unit.**MUAR 253B. Case Audio Recording Internship III. 0 Unit.****MUAR 254B. Case Audio Recording Internship IV. 0 Unit.****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 301. 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.

Study of techniques for optimizing professional recording equipment performance. Recommended preparation: MUAR 201.

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.

MUCP Courses**MUCP 200. Composition Seminar. 0 Unit.****MUCP 399. Undergraduate Independent Studies. 1 - 3 Units.**

Each student develops a topic of interest to be explored with a faculty member.

MUCP 400. Composition Seminar. 0 Unit.**MUCP 501. Composition Independent Study. 1 Unit.****MUED Courses****MUED 200A. Basic Skills and Pedagogy: Voice. 2 Units.**

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. 2 Units.

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. 2 Units.

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. 2 Units.

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. 2 Units.

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. 2 Units.

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 200J. Basic Skills & Pedagogy: Piano for Music Educators. 2 Units.

Designed for music education majors to provide the fundamentals of using piano in the classroom for pedagogy and accompaniment. Prereq: MUED 240.

MUED 200P. Basic Skills and Pedagogy: Percussion. 2 Units.

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 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. A student may not receive credit for both MUED 240 and MUED 410.

MUED 275. Elements of Conducting. 3 Units.

This course is designed to develop the cognitive, affective and psychomotor skills necessary for students to communicate effectively with performing ensembles. Students will learn to listen, think, and communicate verbally and nonverbally through systematic exercises, in order to prepare for ensemble rehearsal and performance experiences.

MUED 276. Advanced Conducting, Score Analysis and Rehearsal Techniques. 3 Units.

This course is designed to continue development of the cognitive, affective and psychomotor skills necessary for students to communicate effectively with performing ensembles. Students will learn to listen, think, and communicate nonverbally through systematic exercises, in order to prepare for ensemble rehearsal and performance experiences. In addition, students will apply foundational study of musical forms to score analysis and score preparation. Students will also develop a working vocabulary of rehearsal techniques for use with instrumental and vocal ensembles. Prereq: MUED 275.

MUED 300. Intensive Field Experience. 0 Unit.

This course is intended for BS and MA-Licensure music education majors, and acquaints students with various teaching settings in P-12 schools in the greater Cleveland area; allows students to observe and teach with practicing music teachers; and fosters critical thinking skills related to effective teaching, lesson planning, and other elements of teaching. Offered as MUED 300 and MUED 400. Prereq: MUED 240, MUED 305, and MUED 350. Coreq: MUED 355 and (MUED 352 or MUED 353).

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. Counts for CAS Global & Cultural Diversity Requirement.

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 music 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. 3 Units.

General Music Methods 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.

MUED 353. Choral Methods and Materials. 3 Units.

This course acquaints students with effective ways to develop, organize and maintain a successful choral program for any age group, based on a comprehensive choral music education model. Students review fundamental vocal pedagogy 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 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 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 Units.

Each student develops a topic of interest to be explored with a faculty member.

MUED 400. Intensive Field Experience. 0 Unit.

This course is intended for BS and MA-Licensure music education majors, and acquaints students with various teaching settings in P-12 schools in the greater Cleveland area; allows students to observe and teach with practicing music teachers; and fosters critical thinking skills related to effective teaching, lesson planning, and other elements of teaching. Offered as MUED 300 and MUED 400. Prereq: MUED 305, MUED 350, and MUED 410. Coreq: MUED 355 and (MUED 352 or MUED 353).

MUED 410. Professional Music Education: A Career Introduction. 1 Unit.

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. Admission into the Master of Arts with Teacher License Music Education Program is a prerequisite for this course. A student may not receive credit for both MUED 240 and MUED 410. 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. Informal Music Learning in Education. 3 Units.

This course explores the tenets of informal music making as it relates to teaching school music. Students will learn how to create, compose, improvise, and perform on a variety of folk and traditional instruments. Specific topics of this course include songwriting, cover tunes, original songs, and creative warm-ups for traditional ensembles. This course also is designed to assist students in developing diverse school music offerings through utilizing research tools and resources on creativity, generating project-based learning opportunities for school students, assessing creativity, and fostering critical thinking, all within the contexts of formal and informal modes of music teaching and learning. Prereq: Graduate Student in Music Education or requisites not met permission of instructor.

MUED 445. Pedagogy in Practice. 3 Units.

This course is designed to help students better understand music teaching skills and characteristics of effective teachers, and to critique teaching practices and abilities through an examination of research-based and pedagogy-based scholarship. Students will learn to find, interpret, and use music education research to improve their own classroom pedagogy. Group class meetings will take place on campus, and individual, mentored lab experiences will be held via Skype or in students' schools. Prereq: Graduate Student in Music Education or requisites not met permission of instructor.

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. Prereq: MUED 440.

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 450. Special Topics in Music Education. 3 Units.

Close study of a theme or aspect of music education, such as brain development in music education, biomechanics and music, gender studies in music education, and gerontology and music learning.

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, 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 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 Units.**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 565. Graduate Chamber Ensemble. 1 Unit.

This course is intended for graduate music education students who desire to perform at a high level. The purposes of this course are to give students the opportunity to further their technical and musical development through the performance of chamber music repertoire; work collaboratively with colleagues in the preparation of this repertoire by functioning as both performer and coach; foster score study and repertoire research by planning each program, writing program notes, and running the performance; and work with other chamber groups and evaluate their performances and assist them with their preparation.

MUED 590. Seminar in Music Education. 3 Units.

This seminar is designed for music education doctoral students to pursue advanced research methodologies and procedures. Topics might include meta-analysis, multiple regression, advanced qualitative coding, and mixed methods research.

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 601. Special Readings (Ph.D./D.M.A.). 1 - 18 Units.**MUED 640. Qualitative Research in Music Education. 3 Units.**

This course provides music education graduate students with an in-depth look at qualitative research techniques in educational settings, along with an emphasis on design and analysis, and a critical review of selected research studies in music education. The goals of this class include gaining an understanding of the qualitative research paradigm, learning to write effectively and efficiently as a qualitative researcher, and conducting a small-scale qualitative research project. Prereq: Graduate Music Education major and MUED 440 or requisites not met permission.

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 650. Fieldwork and Advanced Qualitative Analysis in Music Education. 3 Units.

This course provides graduate students interested in music education research with an advanced work on fieldwork and analysis technique for qualitative research in educational setting, and a critical review of selected research studies within and beyond music education. The three main goals of this class are (1) to critique qualitative research paradigm in music education; (2) to learn to conduct data analysis for grounded theory, phenomenology, and narrative inquiry; and (3) to prepare a research proposal for one of the three methodologies listed in point 2. With these perspectives, students will be better prepared to understand qualitative research in music education, evaluate research, and know how to use it in their classrooms. Prereq: MUED 640 or Requisites Not Met permission.

MUED 651. Thesis (M.A. and M.M.). 1 - 6 Units.
(Credit as arranged.)**MUED 696. College Teaching Practicum. 0 Unit.****MUED 701. Dissertation Ph.D.. 1 - 9 Units.**

(Credit as arranged.) Prereq: Predoctoral research consent or advanced to Ph.D. candidacy milestone.

MUED 710. Music Education Doctoral Seminar. 0 Unit.

This seminar will provide PhD students in music education with a unique opportunity to examine, explore, and discuss topics relevant to their professional lives. Rotating topics will vary in nature and will include developing and presenting research presentations, publishing student work, discussing the political and social landscapes of academia, considering research-oriented collaborations between doctoral students and/or faculty members, preparing for the job hunt, planning for the tenure process, and other pertinent issues surrounding music teaching and learning in higher education. Prereq: PhD student in Music Education.

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. Coreq: MUEN 383.

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 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 371A. Klezmer Music Ensemble. 0 Unit.

The Klezmer Music Ensemble is dedicated to learning and performing traditional East European Jewish folk music (Klezmer Music). This important genre of world music involves a specialized performance style, a unique repertoire, and chamber-music interaction. Classes will consist of two-hour sessions (once a week) culminating with a performance to be scheduled at the end of the semester. The ensemble is open by audition to all CWRU and CIM instrumentalists and vocalists.

MUEN 371B. Klezmer Music Ensemble. 1 Unit.

The Klezmer Music Ensemble is dedicated to learning and performing traditional East European Jewish folk music (Klezmer Music). This important genre of world music involves a specialized performance style, a unique repertoire, and chamber-music interaction. Classes will consist of two-hour sessions (once a week) culminating with a performance to be scheduled at the end of the semester. The ensemble is open by audition to all CWRU and CIM instrumentalists and vocalists.

MUEN 373. Jazz Ensemble I. 0 - 1 Units.

Recommended preparation: Audition required.

MUEN 374. Jazz Ensemble II. 0 - 1 Units.**MUEN 380A. Case Men's Glee Club. 0 Unit.**

Case Mens Glee Club is a lower voice choral ensemble open to all students enrolled in the University who enjoy singing. The ensemble performs a wide variety of accompanied and a cappella repertoire written specifically for tenor, baritone, and bass voices. The ability to read music is not required for participation and there is no formal audition. The director will lead members in exercises to ensure everyone is singing the appropriate voice part. Goals of the Case Mens Glee Club include developing basic musicianship skills, learning healthy singing habits, and enjoying sharing music with fellow singers and the community.

MUEN 380B. Case Men's Glee Club. 1 Unit.

Case Mens Glee Club is a lower voice choral ensemble open to all students enrolled in the University who enjoy singing. The ensemble performs a wide variety of accompanied and a cappella repertoire written specifically for tenor, baritone, and bass voices. The ability to read music is not required for participation and there is no formal audition. The director will lead members in exercises to ensure everyone is singing the appropriate voice part. Goals of the Case Mens Glee Club include developing basic musicianship skills, learning healthy singing habits, and enjoying sharing music with fellow singers and the community.

MUEN 382. Case Concert Choir. 0 - 1 Units.

Case Concert Choir is open to any undergraduate or graduate student by audition. The ensemble performs both a cappella and accompanied choral music from a variety of time periods and genres. Concert Choir members have the opportunity to perform choral-orchestral repertoire through collaborations with the Case University Circle Orchestra and our other University Circle neighbors. The ensemble maintains a tradition of excellence in performance, strives to improve group and individual musicianship skills, and fosters community building. 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.

University Singers is open to all students enrolled in the University who enjoy singing. The ensemble performs a wide variety of accompanied and a cappella repertoire. The ability to read music is not required for participation and no audition is necessary. Students must be able to match pitch and can expect to sing for the conductor to determine their appropriate vocal parts. Goals of the University Singers include developing basic musicianship skills, learning to sing safely and efficiently, and enjoying sharing music with fellow singers and the community.

MUEN 388A. University Chorale. 0 Unit.

University Chorale is a treble vocal ensemble open to all students enrolled in the University who enjoy singing. The ensemble performs a wide variety of accompanied and a cappella repertoire written specifically for treble voices. The ability to read music is not required for participation and there is no formal audition. The director will lead members in exercises to ensure everyone is singing the appropriate voice part. Goals of the University Chorale include developing basic musicianship skills, learning healthy singing habits, and enjoying sharing music with fellow singers and the community.

MUEN 388B. University Chorale. 1 Unit.

University Chorale is a treble vocal ensemble open to all students enrolled in the University who enjoy singing. The ensemble performs a wide variety of accompanied and a cappella repertoire written specifically for treble voices. The ability to read music is not required for participation and there is no formal audition. The director will lead members in exercises to ensure everyone is singing the appropriate voice part. Goals of the University Chorale include developing basic musicianship skills, learning healthy singing habits, and enjoying sharing music with fellow singers and the community.

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.

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 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. Counts for CAS Global & Cultural Diversity Requirement. Prereq: For Non-Music Majors only.

MUGN 220. Composers of the Musical on Stage and Screen. 3 Units.

This course is meant to provide students with an introduction to the role of music in the history, reception, and popularity of the Broadway and Hollywood musical, with a particular focus on the creators—the composers, lyricists, and orchestrators. We will survey the early history, going back to 19th century experiments, revues, and the origins of the "book" musical, going through the golden age of the 1930s to the 1950s, the nadir of output in the 1960s and 1970s (Oh, Calcutta!, anyone?), the revival in the 1980s with the rise of the megamusical, all the way to today's rock-music driven puppet extravaganzas. Classes will also discuss ever-shifting genres and styles of music, new approaches to songwriting, and changes to what qualifies as "acceptable" music. There's also the structure of the stories to consider, as well as gender roles, racial stereotypes, ethnic under/overtone, and camp.

MUGN 294. Stage Movement for Opera I. 1 Unit.**MUGN 296. Acting Technique I. 1 Unit.****MUGN 298. Opera Role Preparation. 1 Unit.****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 310. Russian Song. 1 Unit.

The Russian Song course is dedicated to the exploration and performance of vocal music from Russia and the former USSR. Russia comprises many ethnic groups and has a vast repertoire of folk music, folk instruments, and singing styles. Students will learn children's songs, art songs, "city" romances, Cossack songs, Georgian polyphony and folk dances. Each song is placed in context, with an eye towards culture, symbolism, history, poetry/lyrics, and customs. Students will look at how classical composers use Russian folk music in their long forms. The study of Chastushki, an ancient Russian village phenomenon which continues to evolve, will lead to creating students' own stylistically appropriate poetry and ostinato. Russian percussion and other instruments will enhance the song and dance, all culminating in a final performance at the end of the semester. Offered as RUSN 305 and MUGN 310.

MUGN 323. Applied Diction: German. 1 Unit.

Intended for undergraduate/graduate voice and collaborative piano majors with insufficient background in the fundamental rules of German pronunciation and the International Phonetic Alphabet. Prereq: MUGN 321.

MUGN 324. Applied Diction: French. 1 Unit.

Intended for undergraduate/graduate voice and collaborative piano majors with insufficient background in the fundamental rules of French pronunciation and the International Phonetic Alphabet. Prereq: MUGN 321.

MUGN 370. Intro to Improvisation. 1 Unit.**MUGN 399. Undergraduate Independent Studies. 1 - 3 Units.**

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 Units.

MUGN 651. Thesis: (M.A. and M.M.). 1 - 6 Units.
(Credit as arranged.)

MUGN 751. Recital Document I-D.M.A.. 1 - 3 Units.**MUGN 752. Recital Document II - D.M.A.. 1 - 3 Units.****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.

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 309. Christian Music: Historical and Global Perspectives. 3 Units.

Music has played an outsized role in the history and development of Christianity, from plainchant to polyphony, shape note singing to gospel, congregational hymns to contemporary genres and global musical expressions at Christian worship across different continents and cultures. Offered as an upper-division seminar for advanced undergraduate and graduate students, this seminar examines the history and development of Christian music around the world within the social, cultural, regional, ritual, and spiritual contexts that inspired their emergence and growth. While the primary approach in this seminar is historiographical, ethnomusicological principles may be utilized where appropriate to examine contemporary genres of Christian music from the Two-Thirds or Majority World. Offered as RLG 318, RLG 418, and MUHI 309. Counts as SAGES Departmental Seminar. Counts for CAS Global & Cultural Diversity Requirement.

MUHI 310. Music Cultures of the World. 3 Units.

An introduction to musics of the world, focusing on the relationship of musical traditions and practices to culture and society. Counts for CAS Global & Cultural Diversity Requirement.

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, music videos and films. Students taking this course may not receive credit for MUGN 212. Counts for CAS Global & Cultural Diversity Requirement. 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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

MUHI 316. The Lemonade Class: Religion, Race, Sex and Black Music. 3 Units.

Charles Long suggests that black musical forms are creative responses to the particular circumstances of black peoples' presence in the U.S and black notions of the sacred. In April of 2016, Beyoncé released her visual album *Lemonade* two days after the death of Prince. This course is organized around the album's title cuts and links these two artists together in an examination of religion and musical performance as creative response to the racial and gendered conditions of black life. The course investigates how both artists have used music as a platform to explore issues of race, gender, commerce, sexuality, power and divinity. The course also looks at examples from the works of earlier artists who address similar themes such as Ma Rainey, Bessie Smith, Muddy Waters, Billie Holiday, Nina Simone, Little Richard, James Brown, Marvin Gaye, and Aretha Franklin. Offered as AFST 302, ETHS 302, MUHI 316, RLG 302, RLG 402, and WGST 302. Counts for CAS Global & Cultural Diversity Requirement.

MUHI 320. Global Pop. 3 Units.

Exploration of popular music practices, particularly rock, pop, and hip hop, outside the United States. Counts for CAS Global & Cultural Diversity Requirement.

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 RLG 326 Counts for CAS Global & Cultural Diversity Requirement.

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. 2 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 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 MUHI 201 and MUHI 202.

MUHI 395B. Capstone for Music Majors B. 1 - 4 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 Units.

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 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 Units.**MUHI 590. Seminar in Musicology. 3 Units.**

Problems in musical criticism, aesthetics, and analysis, as well as interdisciplinary methodologies.

MUHI 601. Special Readings Ph.D./D.M.A.. 1 - 18 Units.**MUHI 610. Research Methods in Music. 3 Units.**

Seminar in research methods and techniques, including a historical overview of modern musicology and an introduction to different research methodologies. Significant time will be spent on writing abilities related to writing for scholarly versus general audiences.

MUHI 611. DMA Lecture-Recital and Document Seminar. 3 Units.

This seminar prepares DMA students from CIM to produce either the Lecture-Recital or DMA Document, a crucial degree requirement for which students must demonstrate both scholarly and musical expertise. Over the course of the semester each student will identify a viable topic, develop a bibliography, and write a prospectus. Registered students are expected to attend and participate in every session.

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 repertoires (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 repertoires: 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 651. Thesis (M.A. and M.M.). 1 - 6 Units.

(Credit as arranged.)

MUHI 699. Qualifying Exam Practicum. 0 Unit.

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 Units.

(Credit as arranged.) Prereq: Predoctoral research consent or advanced to Ph.D. candidacy milestone.

MUHI 710. Dissertation Seminar. 0 Unit.

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 Units.**MUHI 753. Recital Document III-D.M.A.. 1 - 6 Units.****MUPD Courses****MUPD 399. Undergraduate Independent Studies. 1 - 3 Units.**

Each student develops a topic of interest to be explored with a faculty member.

MUPD 501. Special Reading (M.A. and M.M.). 1 - 18 Units.**MUTH Courses****MUTH 101. Theory and Aural Skills I. 4 Units.**

An investigation of common-practice tonality through written exercises, keyboard work, ear training, and sight singing. MUTH 101 contains four components: (1) written work emphasizing topics such as key signatures, scales, intervals, triad and seventh chord construction, voice leading, and harmonic analysis; (2) keyboard exercises that complement theoretical studies, including scales, folk melody accompaniment, chorale harmonization, and figured bass; (3) ear training consisting of various types of dictation and listening exercises; and (4) sight singing with an emphasis on diatonic materials. Placement by examination.

MUTH 101I. Intensive Theory and Aural Skills I. 4 Units.

An investigation of common-practice tonality through written exercises, keyboard work, ear training, and sight singing. MUTH 101I contains four components: (1) written work emphasizing topics such as key signatures, scales, intervals, triad and seventh chord construction, voice leading, and harmonic analysis; (2) keyboard exercises that complement theoretical studies, including scales, folk melody accompaniment, chorale harmonization, and figured bass; (3) ear training consisting of various types of dictation and listening exercises; and (4) sight singing with an emphasis on diatonic materials. This course includes a required Lab component. Each day students will meet for 20 minutes to drill the written and skills material covered in MUTH 101I. Placement by examination.

MUTH 102. Theory and Aural Skills II. 4 Units.

An investigation of common-practice tonality through written exercises, keyboard work, ear training, and sight singing. MUTH 102 contains four components: (1) written exercises including voice leading and analysis of topics including nondominant seventh chords, harmonic sequences, and tonicization; (2) keyboard exercises that complement theoretical studies, including harmonic progressions, folk melody accompaniment, chorale harmonization, and figured bass realization; (3) ear training consisting of various types of dictation and listening exercises; and (4) sight singing with an emphasis on advanced diatonic and beginning chromatic materials. Prereq: MUTH 101 or MUTH 101I or placement by examination.

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 201. Theory and Aural Skills III. 4 Units.

An investigation of common-practice tonality through written exercises, keyboard work, ear training, and sight singing. MUTH 201 contains four components: (1) written exercises including voice leading and analysis of topics including tonicization, modulation, mixture, and the Neapolitan chord; (2) keyboard exercises that complement theoretical studies, including modulatory progressions, folk melody accompaniment, chorale harmonization, and figured bass realization; (3) ear training consisting of harmonic dictation and listening exercises; and (4) sight singing with an emphasis on chromatic materials. Prereq: MUTH 102 or placement by exam.

MUTH 202. Harmony-Keyboard IV. 4 Units.

(See MUTH 201.) Recommended preparation: MUTH 102 or placement examination.

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 or MUTH 104.

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 or MUTH 208.

MUTH 390. Music Theory Literature Review. 2 Units.**MUTH 399. Undergraduate Independent Studies. 1 - 3 Units.**

Each student develops a topic of interest to be explored with a faculty member.

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 423. Analysis of Musical Styles. 3 Units.

Analysis of selected musical compositions from various periods of the common practice era. Emphasis on traditional structures, stylistic features, and the relationship of analysis and performance.

MUTH 424. Introduction to Schenkerian Analysis. 3 Units.

An introduction to the theories of Heinrich Schenker and their application to the analysis of tonal music. Intensive analytical work and selected readings. Recommended preparation: MUTH 400A competency.

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.**MUTH 501. Special Reading (M.A. and M.M.). 1 - 18 Units.**

MUDE (MUDE)

MUDE 100. First Year Eurhythmics Lab. 0 Unit.

First-Year Eurhythmics Lab is an experience designed to provide additional support for students as they take Eurhythmics I as first-year students. This class will allow students to review for Eurhythmics I assessments and seek clarification as needed. Materials will be presented aurally, visually, and kinesthetically to provide an immersive rhythmic experience. Coreq: MUDE 101.

MUDE 101. Eurhythmics I. 0 Unit.

Physical expression of rhythm in which large bodily movements form the reference for rhythmic analysis. Study of pulse, meter, patterns, crossrhythms, improvisation, rhythmic canons, and bodily coordination emphasizing proper tension and relaxation. Recommended preparation: MUTH 003.

MUDE 102. Eurhythmics II. 0 Unit.

(See MUDE 101.)

MUDE 501. Special Reading (M.M. and M.A.). 1 Unit.

Natural Sciences Program

112 AW Smith Bldg
www.case.edu/artsci/natsci (<http://www.case.edu/artsci/natsci/>)
Phone: 216.368.3989
Peter Whiting, Program Advisor
peter.whiting@case.edu

The Natural Sciences Program offers an interdepartmental major that leads to a Bachelor of Arts degree. It is intended to serve students who wish to acquire a broad background in the natural sciences while pursuing a separate major in the humanities, the social sciences, or the arts.

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 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 natural science 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:

One of the following sequences:	8
MATH 125 & MATH 126	Math and Calculus Applications for Life, Managerial, and Social Sci I and Math and Calculus Applications for Life, Managerial, and Social Sci II
MATH 121 & MATH 122	Calculus for Science and Engineering I and Calculus for Science and Engineering II
Total Units	8

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.

Astronomy

One of the following sequences:	6
ASTR 221 & ASTR 222	Stars and Planets and Galaxies and Cosmology
ASTR 101	Introduction to the Sun and Its Planets (& any other 100-level ASTR course - 3 credits or more)
Total Units	6

Biology

Two of the following sequences:	8
BIOL 214 & 214L	Genes, Evolution and Ecology and Genes, Evolution and Ecology Lab
BIOL 215 & 215L	Cells and Proteins and Cells and Proteins Laboratory
BIOL 216 & 216L	Development and Physiology and Development and Physiology Lab
Total Units	8

Chemistry

One of the following sequences:	8-10
CHEM 105 & CHEM 106 & CHEM 113	Principles of Chemistry I and Principles of Chemistry II and Principles of Chemistry Laboratory
CHEM 111 & CHEM 113 & ENGR 145	Principles of Chemistry for Engineers and Principles of Chemistry Laboratory and Chemistry of Materials
Total Units	8-10

Earth, Environmental, and Planetary Sciences

One of the following:	1-3
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

4-6

Mathematics, Applied Mathematics, and Statistics

One of the following sequences:	8
MATH 125 & MATH 126	Math and Calculus Applications for Life, Managerial, and Social Sci I and Math and Calculus Applications for Life, Managerial, and Social Sci II
MATH 121 & MATH 122	Calculus for Science and Engineering I and Calculus for Science and Engineering II
Total Units	8

Physics

One of the following sequences:	8-11
PHYS 115 & PHYS 116	Introductory Physics I and Introductory Physics II
PHYS 121 & PHYS 122 & PHYS 221	General Physics I - Mechanics and General Physics II - Electricity and Magnetism and Introduction to Modern Physics
Total Units	8-11

Nutrition

The College of Arts and Sciences awards the Bachelor of Arts and Bachelor of Science degrees in nutrition. The required courses for the majors and minors are offered by the Department of Nutrition in the School of Medicine.

Major Programs

The undergraduate degree in nutrition is appropriate for students who wish to:

1. pursue graduate programs in nutritional biochemistry, dietetics, public health and community nutrition or other biomedical sciences

- enter professional schools of dentistry, medicine, physical therapy, or pharmacy
- apply to dietetic internships or approved experience programs in order to prepare for the professional practice of dietetics
- pursue careers with the government or in the food or pharmaceutical industry

This major offers flexibility in course selection within a framework of general program requirements. The selection of courses depends on the student's choice of emphasis. Students wishing to qualify for admission to professional or graduate programs need to include specific courses considered prerequisites for admission. Students interested in applying to dietetic internships must meet specific course requirements (Didactic Program in Dietetics) as required by the Accreditation Council for Education in Nutrition and Dietetics of the Academy of Nutrition and Dietetics. These requirements are met in the courses that comprise the Didactic Program in Dietetics (DPD). The DPD at Case Western Reserve University is currently granted Accreditation by the Accreditation Council for Education in Nutrition and Dietetics of the Academy of Nutrition and Dietetics, 120 South Riverside Plaza, Suite 2000, Chicago, IL 60606-6995, 800.877.1600. A department advisor should be consulted in the freshman year to plan the dietetics coursework.

Human Nutrition

Bachelor of Science degree requires:

Required Courses:

NTRN 201	Nutrition	3
NTRN 342	Food Science	3
NTRN 342L	Food Science Lab	2
NTRN 343	Dietary Patterns	3
NTRN 363	Human Nutrition I: Energy, Protein, Minerals	3
NTRN 364	Human Nutrition II: Vitamins	3
NTRN 397	SAGES Capstone Proposal Seminar	3
NTRN 398	SAGES Senior Capstone Experience	3
Three nutrition electives chosen from:		9
NTRN 300	Healthy Lifestyles as Preventive Medicine	
NTRN 328	Child Nutrition, Development and Health	
NTRN 338	Dietary Supplements	
NTRN 341	Food as Medicine: How what we eat influences how we feel, think, and our health status	
NTRN 351	Food Service Systems Management	
NTRN 360	Clinical Assessment and Diagnosis: Nutritional, Functional, Physical	
NTRN 361	Metabolic Dysregulation of Energy from Obesity to Anorexia	
NTRN 362	Exercise Physiology and Macronutrient Metabolism	
NTRN 365	Nutrition for the Prevention and Management of Disease: Pathophysiology	
NTRN 366	Nutrition for the Prevention and Management of Disease: Clinical Applications	

NTRN 367	Nutrition Strategies and Wellness Programming	
NTRN 371	Special Problems *	
NTRN 388	Seminar in Sports Nutrition	
NTRN 390	Undergraduate Research *	
NTRN 435	Nutrition during Pregnancy and Lactation	
NTRN 436	Pediatric Nutrition	
NTRN 437	Nutrition Communication, Counseling and Behavior Change Strategies	
NTRN 438	Dietary Supplements	
NTRN 439	Food Behavior: Physiological, Psychological and Environmental Determinants	
NTRN 440	Nutrition for the Aging and Aged	
NTRN 452	Nutritional Biochemistry and Metabolism	
NTRN 550A or NTRN 528	Advanced Community Nutrition Introduction to Public Health Nutrition	

Additional Required Courses:

CHEM 105	Principles of Chemistry I	3
CHEM 106	Principles of Chemistry II	3
CHEM 113	Principles of Chemistry Laboratory	2
CHEM 223	Introductory Organic Chemistry I (before NTRN 363)	3
BIOL 214	Genes, Evolution and Ecology	3
BIOL 216	Development and Physiology	3
or BIOL 340 & BIOL 346	Human Physiology and Human Anatomy	
BIOL 216L	Development and Physiology Lab	1
BIOC 307	Introduction to Biochemistry: From Molecules To Medical Science	4
One of the following:		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	
PQHS 431	Statistical Methods I	3
Total Units		60

* Only one of these courses is permitted. 400 level courses require instructor consent for undergraduates to enroll.

Bachelor of Arts degree requires:

Required Courses:

NTRN 201	Nutrition	3
NTRN 342	Food Science	3
NTRN 342L	Food Science Lab	2
NTRN 343	Dietary Patterns	3
NTRN 363	Human Nutrition I: Energy, Protein, Minerals	3
NTRN 364	Human Nutrition II: Vitamins	3

NTRN 397	SAGES Capstone Proposal Seminar	3
NTRN 398	SAGES Senior Capstone Experience	3
Two nutrition electives chosen from the following:		6
NTRN 300	Healthy Lifestyles as Preventive Medicine	
NTRN 328	Child Nutrition, Development and Health	
NTRN 338	Dietary Supplements	
NTRN 341	Food as Medicine: How what we eat influences how we feel, think, and our health status	
NTRN 351	Food Service Systems Management	
NTRN 360	Clinical Assessment and Diagnosis: Nutritional, Functional, Physical	
NTRN 361	Metabolic Dysregulation of Energy from Obesity to Anorexia	
NTRN 362	Exercise Physiology and Macronutrient Metabolism	
NTRN 365	Nutrition for the Prevention and Management of Disease: Pathophysiology	
NTRN 366	Nutrition for the Prevention and Management of Disease: Clinical Applications	
NTRN 367	Nutrition Strategies and Wellness Programming	
NTRN 371	Special Problems *	
NTRN 388	Seminar in Sports Nutrition	
NTRN 390	Undergraduate Research *	
NTRN 435	Nutrition during Pregnancy and Lactation	
NTRN 436	Pediatric Nutrition	
NTRN 437	Nutrition Communication, Counseling and Behavior Change Strategies	
NTRN 438	Dietary Supplements	
NTRN 439	Food Behavior: Physiological, Psychological and Environmental Determinants	
NTRN 440	Nutrition for the Aging and Aged	
NTRN 452	Nutritional Biochemistry and Metabolism	
NTRN 550A or NTRN 528	Advanced Community Nutrition Introduction to Public Health Nutrition	
Additional required courses:		
CHEM 105	Principles of Chemistry I	3
CHEM 106	Principles of Chemistry II	3
CHEM 223	Introductory Organic Chemistry I	3
BIOC 307	Introduction to Biochemistry: From Molecules To Medical Science	4
BIOL 214	Genes, Evolution and Ecology	3
BIOL 216	Development and Physiology	3
or BIOL 340 & BIOL 346	Human Physiology and Human Anatomy	

BIOL 216L	Development and Physiology Lab	1
Total Units		49

* Only one of these courses is permitted.
400 level courses require instructor consent for undergraduates to enroll.

Bachelor of Science in Nutrition - Human Nutrition Major Example Plan of Study

First Year	Units	
	Fall	Spring
Principles of Chemistry I (CHEM 105)	3	
Nutrition (NTRN 201)	3	
SAGES First Seminar	4	
Genes, Evolution and Ecology (BIOL 214)	3	
Principles of Chemistry II (CHEM 106)		3
Principles of Chemistry Laboratory (CHEM 113)		2
SAGES Breadth Requirements		9
Year Total:	13	14

Second Year	Units	
	Fall	Spring
NTRN Electives	6	
Introductory Organic Chemistry I (CHEM 223)	3	
SAGES University Seminar	3	
Development and Physiology (BIOL 216)	3	
Development and Physiology Lab (BIOL 216L)	1	
SAGES University Seminar		3
Basic Statistics for Social and Life Sciences (STAT 201)		3
Electives		6
Dietary Patterns (NTRN 343)		3
Year Total:	16	15

Third Year	Units	
	Fall	Spring
Introduction to Biochemistry: From Molecules To Medical Science (BIOC 307)	4	
SAGES Breadth Requirements	6	
Food Science (NTRN 342)	3	
Food Science Lab (NTRN 342L)	2	
Nutrition Elective		3
Elective		3
SAGES Capstone Proposal Seminar (NTRN 397)		3
SAGES Breadth Requirements		6
Year Total:	15	15

Fourth Year	Units	
	Fall	Spring
SAGES Senior Capstone Experience (NTRN 398)	3	
Electives	9	
Human Nutrition I: Energy, Protein, Minerals (NTRN 363)	3	
Human Nutrition II: Vitamins (NTRN 364)		3

Nutrition Elective	3
Electives	9
Year Total:	15 15

Total Units in Sequence: 118

Nutritional Biochemistry and Metabolism

Bachelor of Arts degree requires:

Required courses:

NTRN 201	Nutrition	3
NTRN 343	Dietary Patterns	3
NTRN 363	Human Nutrition I: Energy, Protein, Minerals	3
NTRN 364	Human Nutrition II: Vitamins	3
NTRN 397	SAGES Capstone Proposal Seminar	3
NTRN 398	SAGES Senior Capstone Experience	3
NTRN 452	Nutritional Biochemistry and Metabolism	3

Three nutrition electives at 300-level (or above with instructor consent) chosen from the following: 9

NTRN 300	Healthy Lifestyles as Preventive Medicine
NTRN 328	Child Nutrition, Development and Health
NTRN 338	Dietary Supplements
NTRN 341	Food as Medicine: How what we eat influences how we feel, think, and our health status
NTRN 351	Food Service Systems Management
NTRN 360	Clinical Assessment and Diagnosis: Nutritional, Functional, Physical
NTRN 361	Metabolic Dysregulation of Energy from Obesity to Anorexia
NTRN 365	Nutrition for the Prevention and Management of Disease: Pathophysiology
NTRN 366	Nutrition for the Prevention and Management of Disease: Clinical Applications
NTRN 367	Nutrition Strategies and Wellness Programming
NTRN 371	Special Problems
NTRN 388	Seminar in Sports Nutrition
NTRN 390	Undergraduate Research

Additional required 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	
CHEM 105	Principles of Chemistry I	3
CHEM 106	Principles of Chemistry II	3
CHEM 113	Principles of Chemistry Laboratory	2
CHEM 223	Introductory Organic Chemistry I	3

or CHEM 323	Organic Chemistry I	
CHEM 224	Introductory Organic Chemistry II	3
or CHEM 324	Organic Chemistry II	
CHEM 233	Introductory Organic Chemistry Laboratory I	2
CHEM 234	Introductory Organic Chemistry Laboratory II	2
BIOL 214	Genes, Evolution and Ecology	3
BIOL 215	Cells and Proteins	3
BIOL 216	Development and Physiology	3
or BIOL 340 & BIOL 346	Human Physiology and Human Anatomy	
BIOL 216L	Development and Physiology Lab	1
PHYS 115	Introductory Physics I	4
or PHYS 121	General Physics I - Mechanics	
PHYS 116	Introductory Physics II	4
or PHYS 122	General Physics II - Electricity and Magnetism	
BIOC 307	Introduction to Biochemistry: From Molecules To Medical Science	4
BIOC 334	Structural Biology	3
or BIOC 312	Proteins and Enzymes	
or NTRN 454	Advanced Nutrition and Metabolism: Investigative Methods	

Total Units 81

Bachelor of Science degree requires:

Required courses:

NTRN 201	Nutrition	3
NTRN 343	Dietary Patterns	3
NTRN 363	Human Nutrition I: Energy, Protein, Minerals	3
NTRN 364	Human Nutrition II: Vitamins	3
NTRN 397	SAGES Capstone Proposal Seminar	3
NTRN 398	SAGES Senior Capstone Experience	3
NTRN 452	Nutritional Biochemistry and Metabolism	3

Three nutrition electives at 300-level (or above with instructor consent) chosen from the following: 9

NTRN 300	Healthy Lifestyles as Preventive Medicine
NTRN 328	Child Nutrition, Development and Health
NTRN 338	Dietary Supplements
NTRN 341	Food as Medicine: How what we eat influences how we feel, think, and our health status
NTRN 351	Food Service Systems Management
NTRN 360	Clinical Assessment and Diagnosis: Nutritional, Functional, Physical
NTRN 361	Metabolic Dysregulation of Energy from Obesity to Anorexia
NTRN 365	Nutrition for the Prevention and Management of Disease: Pathophysiology

NTRN 366	Nutrition for the Prevention and Management of Disease: Clinical Applications	
NTRN 367	Nutrition Strategies and Wellness Programming	
NTRN 371	Special Problems	
NTRN 388	Seminar in Sports Nutrition	
NTRN 390	Undergraduate Research	
Additional required 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	
CHEM 105	Principles of Chemistry I	3
CHEM 106	Principles of Chemistry II	3
CHEM 113	Principles of Chemistry Laboratory	2
CHEM 223	Introductory Organic Chemistry I	3
or CHEM 323	Organic Chemistry I	
CHEM 224	Introductory Organic Chemistry II	3
or CHEM 324	Organic Chemistry II	
CHEM 233	Introductory Organic Chemistry Laboratory I	2
CHEM 234	Introductory Organic Chemistry Laboratory II	2
BIOL 214	Genes, Evolution and Ecology	3
BIOL 215	Cells and Proteins	3
BIOL 216	Development and Physiology	3
or BIOL 340 & BIOL 346	Human Physiology and Human Anatomy	
BIOL 216L	Development and Physiology Lab	1
PHYS 115	Introductory Physics I	4
or PHYS 121	General Physics I - Mechanics	
or PHYS 123	Physics and Frontiers I - Mechanics	
PHYS 116	Introductory Physics II	4
or PHYS 122	General Physics II - Electricity and Magnetism	
or PHYS 124	Physics and Frontiers II - Electricity and Magnetism	
PHYS 221	Introduction to Modern Physics	3
BIOC 307	Introduction to Biochemistry: From Molecules To Medical Science	4
BIOC 334	Structural Biology	3
or BIOC 312	Proteins and Enzymes	
or NTRN 454	Advanced Nutrition and Metabolism: Investigative Methods	
One of the following		
STAT 201	Basic Statistics for Social and Life Sciences	
STAT 243	Statistical Theory with Application I	

STAT 312	Basic Statistics for Engineering and Science	
STAT 313	Statistics for Experimenters	
Total Units		90

Bachelor of Arts in Nutrition - Nutritional Biochemistry and Metabolism Major Example Plan of Study

	Units	
	Fall	Spring
First Year		
Math and Calculus Applications for Life, Managerial, and Social Sci I (MATH 125)	4	
Nutrition (NTRN 201)	3	
Genes, Evolution and Ecology (BIOL 214)	3	
SAGES First Seminar	4	
Principles of Chemistry I (CHEM 105)	3	
SAGES Breadth Requirements		3
Cells and Proteins (BIOL 215)		3
Principles of Chemistry Laboratory (CHEM 113)		2
Math and Calculus Applications for Life, Managerial, and Social Sci II (MATH 126)		4
Principles of Chemistry II (CHEM 106)		3
Year Total:	17	15

	Units	
	Fall	Spring
Second Year		
Introductory Organic Chemistry Laboratory I (CHEM 233)	2	
Introductory Organic Chemistry I (CHEM 223)	3	
Development and Physiology (BIOL 216) & Development and Physiology Lab (BIOL 216L)	4	
SAGES University Seminar	3	
Electives	3	
Introductory Organic Chemistry II (CHEM 224)		3
Introductory Organic Chemistry Laboratory II (CHEM 234)		2
Nutrition Elective		3
Elective		3
SAGES University Seminar		3
Year Total:	15	14

	Units	
	Fall	Spring
Third Year		
Introduction to Biochemistry: From Molecules To Medical Science (BIOC 307)	4	
Introductory Physics I (PHYS 115)	4	
Food Science (NTRN 342)	3	
Food Science Lab (NTRN 342L)	2	
SAGES Capstone Proposal Seminar (NTRN 397)		3
Elective		3
Introductory Physics II (PHYS 116)		4
SAGES Breadth Requirement		6
Year Total:	13	16

Fourth Year	Units	
	Fall	Spring
SAGES Senior Capstone Experience (NTRN 398)	3	
Nutritional Biochemistry and Metabolism (NTRN 452)	3	
Human Nutrition I: Energy, Protein, Minerals (NTRN 363)	3	
Elective	3	
Nutrition Elective (if not already taken)		3
Human Nutrition II: Vitamins (NTRN 364)		3
Structural Biology (BIOC 334)		3
Elective		3
Year Total:	12	12
Total Units in Sequence:		114

Minor in Nutrition

Nutrition majors are not eligible for this minor.

Non Nutrition majors may only take one minor: either Minor in Nutrition, Minor in Sports Nutrition, or Minor in Environmental Nutrition.

Required courses:

NTRN 201	Nutrition	3
NTRN 343	Dietary Patterns	3
Nine credits selected from:		9

NTRN 300	Healthy Lifestyles as Preventive Medicine	
NTRN 328	Child Nutrition, Development and Health	
NTRN 342	Food Science	
NTRN 351	Food Service Systems Management	
NTRN 361	Metabolic Dysregulation of Energy from Obesity to Anorexia	
NTRN 363	Human Nutrition I: Energy, Protein, Minerals	
NTRN 364	Human Nutrition II: Vitamins	
NTRN 365	Nutrition for the Prevention and Management of Disease: Pathophysiology	
NTRN 366	Nutrition for the Prevention and Management of Disease: Clinical Applications	
NTRN 388	Seminar in Sports Nutrition	
Total Units		15

Minor in Sports Nutrition

Nutrition majors are not eligible for this minor.

Non Nutrition majors may only take one minor: either Minor in Nutrition, Minor in Sports Nutrition, or Minor in Environmental Nutrition.

NTRN 201	Nutrition	3
NTRN 361	Metabolic Dysregulation of Energy from Obesity to Anorexia	3
NTRN 362	Exercise Physiology and Macronutrient Metabolism	3

NTRN 363	Human Nutrition I: Energy, Protein, Minerals	3
NTRN 388	Seminar in Sports Nutrition	3
Total Units		15

Minor in Environmental Nutrition

Nutrition majors are not eligible for this minor.

Non Nutrition majors may only take one minor: either Minor in Nutrition, Minor in Sports Nutrition, or Minor in Environmental Nutrition.

Required courses:

ESTD 101	Introduction to Environmental Thinking	3
NTRN 200H	Case Cooks: Healthy Lifestyles	1
NTRN 201	Nutrition	3
NTRN 342	Food Science	3
NTRN 340	Global Food Systems: Environmental Issues, Sustainability, and Health	3
One elective selected from:		3
NTRN 300	Healthy Lifestyles as Preventive Medicine	
NTRN 328	Child Nutrition, Development and Health	
NTRN 337	Nutrition Communication, Counseling and Behavior Change Strategies	
NTRN 341	Food as Medicine: How what we eat influences how we feel, think, and our health status	
NTRN 343	Dietary Patterns	
Total Units		16

Didactic Program in Dietetics (DPD)

The following courses must be included in the program.

Required courses:

NTRN 201	Nutrition	3
NTRN 337	Nutrition Communication, Counseling and Behavior Change Strategies	3
or NTRN 437	Nutrition Communication, Counseling and Behavior Change Strategies	
NTRN 342	Food Science	3
NTRN 342L	Food Science Lab	2
NTRN 343	Dietary Patterns	3
NTRN 351	Food Service Systems Management	3
or NTRN 451	Food Service Systems Management	
NTRN 360	Clinical Assessment and Diagnosis: Nutritional, Functional, Physical	3
NTRN 363	Human Nutrition I: Energy, Protein, Minerals	3
NTRN 364	Human Nutrition II: Vitamins	3
NTRN 365	Nutrition for the Prevention and Management of Disease: Pathophysiology	4

NTRN 366	Nutrition for the Prevention and Management of Disease: Clinical Applications	3
NTRN 550A	Advanced Community Nutrition (or NTRN 528)	3
BIOC 307	Introduction to Biochemistry: From Molecules To Medical Science	4
BIOL 216	Development and Physiology (or BIOL 340 & 346)	3
BIOL 343	Microbiology	3
CHEM 223	Introductory Organic Chemistry I	3
ENGL 150	Expository Writing (or SAGES Writing Portfolio)	3
SOCI 101	Introduction to Sociology	3
One of the following:		3
ANTH 215	Health, Culture, and Disease: An Introduction to Medical Anthropology	
SOCI 311	Health, Illness, and Social Behavior	
One of the following:		3
ANTH 319	Introduction to Statistical Analysis in the Social Sciences	
PSCL 282	Quantitative Methods in Psychology	
PQHS 431	Statistical Methods I	
STAT 201	Basic Statistics for Social and Life Sciences	
STAT 243	Statistical Theory with Application I	
STAT 312	Basic Statistics for Engineering and Science	
STAT 313	Statistics for Experimenters	
Total Units		61

Origins Sciences Program

217 Rockefeller, Institute for the Science of Origins
<http://origins.case.edu/major/>
 Phone: 216.368.4257
 Patricia Princehouse, Director of the Major
patricia.princehouse@case.edu

The Origins Sciences Program offers the Bachelor of Arts degree. The major provides a rigorous course of study with great flexibility in the choice of specific topics and courses. Students play a creative role in designing their own individual educational plans within the major. As a result, they are free to explore nontraditional, multidisciplinary and transdisciplinary subjects.

The Origins Sciences major is designed to connect students with professors breaking through barriers to ask big questions in ways that matter, both at the highest theoretical levels and with immediate practical applications in areas such as medicine and technology. Its concerns range from the nanoscale to ecological relationships to galaxies to dark matter, dark energy and the nature of the universe itself. The major's sponsor, the Institute for the Science of Origins (<http://origins.case.edu/>) (ISO), brings together scientists from Case Western Reserve University, (<http://www.case.edu/>) the Cleveland Museum of Natural History (<https://www.cmnh.org/>) and other partner institutions to

answer questions about the origin and evolution of simple and complex systems, from the big bang to the human mind.

The curriculum emphasizes a broad grounding in the origins sciences, including fundamentals of physics, biology, chemistry and mathematics, and encompassing aspects of anthropology, cognitive science, astronomy and earth, environmental and planetary sciences, making it reasonable for students to consider a double or secondary major or a dual degree. A faculty actively engaged in research in these fields and beyond provides first-rate instruction and opportunities for undergraduate involvement in cutting-edge research, including laboratory and museum experience and fieldwork across the globe.

An undergraduate degree in Origins Sciences can be tailored to meet the needs of pre-med or other pre-health students, or to prepare students for graduate programs in any of the allied disciplines, including anthropology, astronomy, biology, chemistry, cognitive science, geosciences, applied mathematics, paleontology and physics.

Majoring in Origins Sciences gives students added value in applying to medical school, graduate school or the increasingly technical science-related MBA and JD programs. The major also provides a strong background for students interested in pursuing careers in science writing; internships are available at ideastream, ISO's public TV and radio partner institution.

Program Faculty

Patricia Princehouse, PhD
Senior Research Associate, Department of History; Director, Origins Sciences Program; Director, Program in Evolutionary Biology; Outreach Director, Institute for the Science of Origins

Glenn Starkman, PhD
Distinguished University Professor, Department of Physics; Director, Institute for the Science of Origins; Director, Center for Education and Research in Cosmology and Astrophysics (CERCA)

Cynthia Beall, PhD
Distinguished University Professor and Sarah Idell Pyle Professor of Anthropology; Co-Director, Center for Research on Tibet

Daniela Calvetti, PhD
James Wood Williamson Professor, Department of Mathematics, Applied Mathematics, and Statistics

Darin Croft, PhD
Associate Professor, Department of Anatomy, School of Medicine

Christopher A. Cullis, PhD
Francis Hobart Herrick Professor of Biology

Michael Decker, PhD
Associate Professor, Frances Payne Bolton School of Nursing

Neil S. Greenspan, MD PhD
Professor, Department of Pathology, School of Medicine

Mark Griswold, PhD
Professor, School of Medicine

Yohannes Haile-Selassie, PhD
Curator and Head of Physical Anthropology, Cleveland Museum of Natural History

Ralph Harvey, PhD
Professor, Department of Earth, Environmental, and Planetary Sciences

Joseph LaManna, PhD
Jeanne M. and Joseph S. Silber Professor, Department of Physiology and Biophysics, School of Medicine

Harsh Mathur, PhD
Professor, Department of Physics

J. Christopher Mihos, PhD
Professor, Department of Astronomy

John E. Ruhl, PhD
Connecticut Professor, Department of Physics

Scott W. Simpson, PhD
Professor, Department of Anatomy, School of Medicine

Erkki Somersalo, PhD
Professor, Department of Mathematics, Applied Mathematics, and Statistics

Giuseppe Strangi, PhD
Professor and Ohio Research Scholar in Surfaces of Advanced Materials, Department of Physics

Kingman P. Strohl, MD
Professor, School of Medicine

Wanda Strychalski, PhD
Assistant Professor, Department of Mathematics, Applied Mathematics, and Statistics

James Van Orman, PhD
Professor, Department of Earth, Environmental, and Planetary Sciences

Mark A. Willis, PhD
Professor, Department of Biology

Major

Origins Sciences is a primary major, but may also be pursued in conjunction with a more traditional disciplinary major. Up to 12 credits in required and elective courses taken by students for their other major may be applied to their Origins Sciences major.

The 30-credit interdisciplinary major in Origins Sciences consists of:

1. Science Core
2. Origins Core
3. Origins Foci

Within the Origins foci, each student will design a curriculum that includes concentrations in at least two Origins Sciences fields, such as:

- Cosmology and astrophysics
- Integrative evolutionary biology (e.g., biochemistry, physical anthropology, paleontology, and evolutionary cognitive science)
- Planetary science and astrobiology

In consultation with a major advisor, students create individual plans of study to suit their particular interests within the major. A typical student will develop a proposal as a sophomore and submit that plan for approval by the Origins Sciences Major Advisory Committee. Each concentration must include at least two 300 or higher level classes and their prerequisites. Subsequent revisions to the plan are encouraged

when appropriate, but must be submitted for approval by the committee at least two weeks before the beginning of the semester preceding the one in which the revisions take effect. Students are strongly encouraged to include an Origins Sciences research experience in their educational plans.

Science Core:

BIOL 214	Genes, Evolution and Ecology	3
BIOL 214L	Genes, Evolution and Ecology Lab	1
BIOL 225	Evolution	3
CHEM 105	Principles of Chemistry I	3
CHEM 106	Principles of Chemistry II	3
MATH 121	Calculus for Science and Engineering I	4
or MATH 125	Math and Calculus Applications for Life, Managerial, and Social Sci I	
MATH 122	Calculus for Science and Engineering II	4
or MATH 126	Math and Calculus Applications for Life, Managerial, and Social Sci II	
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	

Origins Core:

ORIG 101	Origins Prologue: Life, the Universe, and Everything (Optional)	1
ORIG 201	Origins I: From the Beginning	3
ORIG 202	Origins II: Life in all its diversity	3
ORIG 301	Mathematical Modeling Across the Sciences	3
ORIG 351	Topics in Origins (Must be taken twice)	3

Sample First Year Schedule

Freshman	Units	
	Fall	Spring
Origins Prologue: Life, the Universe, and Everything (ORIG 101) (or ORIG 202)	1	
Calculus for Science and Engineering I (MATH 121) (or MATH 125)	4	
General Physics I - Mechanics (PHYS 121) (or PHYS 123 or BIOL 214 or CHEM 105)	4	
Humanities Elective	3	
SAGES First Seminar	3	
PHED Elective	0	
Origins I: From the Beginning (ORIG 201) or The Earth and Planets (EEPS 101)		3
Calculus for Science and Engineering II (MATH 122) or Math and Calculus Applications for Life, Managerial, and Social Sci II (MATH 126)		4

Genes, Evolution and Ecology (BIOL 214) or General Physics I - Mechanics (PHYS 121) or Physics and Frontiers I - Mechanics (PHYS 123) or Evolution (BIOL 225)	3-4
Humanities or Global/Cultural Elective	3
SAGES University Seminar	4
PHED Elective	0
Year Total:	15 17-18
<hr/>	
Total Units in Sequence:	32-33

Courses

ORIG 101. Origins Prologue: Life, the Universe, and Everything. 1 Unit.

This one-credit course introduces students to the research interests of Origins faculty, and thereby to some of the possibilities for student research or focused study. Topics range across cosmology, astronomy, planetary sciences, astrobiology, evolutionary biology, evolutionary cognitive science, anthropology, and evolutionary medicine.

ORIG 201. Origins I: From the Beginning. 3 Units.

A three credit quantitative introduction to cosmology, astrophysics, planetary science and geology in which they are connected through the narrative of origins setting the stage for the development of life on Earth. Prereq: PHYS 121 or PHYS 123.

ORIG 202. Origins II: Life in all its diversity. 3 Units.

An integrated introduction to the origins sciences including aspects of evolutionary biology, ecology, paleontology, physical anthropology and cognitive science. The course will generally meet at the Cleveland Museum of Natural History. Prereq: BIOL 214.

ORIG 301. 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).

ORIG 351. Topics in Origins. 3 Units.

A three-credit special topics course in any Origins discipline or interdisciplinary combination. Instruction may take place on campus or at partner institutions such as the Cleveland Museum of Natural History, and may at times include fieldwork. Offered as ORIG 351 and ORIG 451. Prereq: ORIG 201, ORIG 202, ORIG 301.

ORIG 360. Independent Study in Origins. 1 - 3 Units.

A 1-3 credit offering available on an ad hoc basis to students wishing to pursue in depth study in an appropriate origins topic under the supervision of a willing faculty member. Prereq: ORIG 201, ORIG 202.

ORIG 370. Research in Origins. 1 - 6 Units.

A 1-6 credit offering available on an ad hoc basis to students wishing to pursue independent research in an origins topic under the supervision of a willing faculty member. Offered as ORIG 370 and ORIG 470. Prereq: ORIG 201, ORIG 202, ORIG 301.

ORIG 401. 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).

ORIG 451. Topics in Origins. 3 Units.

A three-credit special topics course in any Origins discipline or interdisciplinary combination. Instruction may take place on campus or at partner institutions such as the Cleveland Museum of Natural History, and may at times include fieldwork. Offered as ORIG 351 and ORIG 451. Prereq: ORIG 201, ORIG 202, ORIG 301.

ORIG 470. Research in Origins. 1 - 6 Units.

A 1-6 credit offering available on an ad hoc basis to students wishing to pursue independent research in an origins topic under the supervision of a willing faculty member. Offered as ORIG 370 and ORIG 470. Prereq: ORIG 201, ORIG 202, ORIG 301.

ORIG 485. Comparative & Evolutionary Physiology. 4 Units.

This course presents physiological concepts from the comparative and evolutionary perspective. Aspects of vertebrate and mammalian evolution will be considered with respect to the generation of adaptive advantages for organisms to changing environmental challenges since the Cambrian. Comparative physiological concepts include scaling, variations in nutrition, energy metabolism and work efficiency. The important influences of time, temperature, water and energy on mammalian biology will be presented. The course is a lecture based course that can be taken in person or on-line. Evaluations will be by regular quizzes, a mid-term and a final exam, all MCQ. Offered as PHOL 485 and ORIG 485.

Department of Philosophy

211 A Clark Hall

www.case.edu/artsci/phil/ (<http://www.case.edu/artsci/phil/>)

Phone: 216.368.2810; Fax: 216.368.0814

Colin McLarty, Department Chair

colin.mclarty@case.edu

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 life contexts. 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. 204), leading to the Bachelor of Arts degree.

The department also participates in, and contributes courses to, the interdisciplinary minor in artificial intelligence in the Department of Electrical Engineering and Computer Science, Case School of Engineering.

Department Faculty

Colin McLarty, PhD

(Case Western Reserve University)

Truman P. Handy Professor of Philosophy and Chair

Logic; philosophy of logic; philosophy of mathematics; philosophy of science; contemporary French 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

Military ethics; leadership ethics; professional ethics; moral psychology; biomedical and environmental ethics

Chris Haufe, PhD

(Columbia University)

Associate Professor

Philosophy of science, philosophy of biology

Laura E. Hengehold, PhD

(Loyola University of Chicago)

Professor

Political and social philosophy; philosophy of feminism; Foucault; contemporary continental philosophy

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

Adjunct Faculty

Richard Boyd, PhD

(MIT)

Philosophy of biology

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

David Whetham, PhD

(King's College London)

Director of King's Centre for Military Ethics, King's College London

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

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 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.

Major Required Courses

PHIL 101	Introduction to Philosophy	3
PHIL 201	Introduction to Logic	3
PHIL 301	Ancient Philosophy	3
PHIL 302	Modern Philosophy	3
Six philosophy electives chosen in consultation with advisor. With permission of advisor, up to 6 hours may be taken outside the department. Only 3 units are permitted to be from a University Seminar. Please contact the department for a current list of University Seminars that may be taken for credit towards the major.		18
Total Units		30

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 Philosophy Honors Thesis to do honors work. Interested students should

apply for admission to the program during the first semester of junior year. The honors thesis counts for capstone credit as well.

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 Philosophy Honors Thesis), chosen to meet the specific needs of students majoring in other fields. The undergraduate advisor will assist students in devising minor programs.

Required Courses

PHIL 101	Introduction to Philosophy	3
Four philosophy electives chosen in consultation with advisor		12
Total Units		15

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 a total of 15 credit hours (i.e., five 3-credit hour courses), as follows: PHIL 101 Introduction to Philosophy, PHIL 305 Ethics, two other PHIL courses 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 305	Ethics	3

Two philosophy courses chosen in consultation with advisor.

PHIL 205	Contemporary Moral Problems
PHIL 207	Good Relationships
PHIL 271	Bioethics: Dilemmas
PHIL 304	Science and Engineering Ethics
PHIL 311	Neuroethics
PHIL 315	Selected Topics in Philosophy
PHIL 317	War and Morality
PHIL 318	People and Planet
PHIL 322	The Science of Happiness
PHIL 330	Topics in Ethics
PHIL 334	Political and Social Philosophy
PHIL 356	Comparative Philosophy
PHIL 371	Advanced Bioethics
PHIL 375	Issues in Aesthetics
PHIL 384	Ethics and Public Policy
PHIL 399	Philosophy Honors Thesis

One course from the following interdisciplinary list:

BETH 315	International Bioethics: Policy and Practice
----------	--

BETH 315B	International Bioethics Policy and Practice: Public Health in the Netherlands
COGS 272	Morality and Mind
ECON 338	Law and Economics
ECON 346	Economic Perspectives
ECON 378	Health Care Economics
ESTD 101	Introduction to Environmental Thinking
POSC 322	Political Movements and Political Participation
RLGN 206	Religion and Ecology
RLGN 311	Representations of Black Religion in Film
RLGN 350	Jewish Ethics
SOCI 250	Law & Society: Law, Rights and Policy
SOCI 349	Social Inequality
SOCI 356	Economic Sociology: Money, Markets, Morals, and Social Life

*Student may petition for courses to be applied to this minor if they involve significant ethics content. No more than two courses may count for both the ethics minor and the philosophy major or minor.

Philosophy Capstone

Students may fulfill their SAGES capstone requirement in philosophy by registering for PHIL 398 Philosophy Capstone after devising a suitable project in consultation with the undergraduate advisor and the supervising faculty member. The honors thesis counts for capstone credit as well.

Master's Program in Military Ethics

Tinkham Veale University Center, Room 260
<http://militaryethics.case.edu>
 Phone: 216.368.2579; Fax: 216.368.4455
 Shannon French, Program Director
shannon.french@case.edu

Military ethics is a broadly interdisciplinary study, incorporating concerns about the conduct of war, decisions on how and when to engage in military operations, and issues relating to the moral psychology and care of those who serve and of veterans of military service. It focuses on the core values and moral principles that collectively govern the men and women serving in the military forces of nations around the world, as members of what is sometimes termed the "military profession" or "the profession of arms." The ethical foundations that define the profession of arms have developed over millennia from the shared values and experiences, unique role responsibilities, and reflections of members of the profession on their own practices—eventually coming to serve as the basis for various warrior codes and the Law of Armed Conflict (LOAC). Traditional just war theory (political and moral philosophy governing when the use of military force is justified for the resolution of international conflicts) plays a key role in international relations as well as in international law, including the LOAC and international humanitarian law.

The Program

The program has been designed to educate students on and guide their research into vital global issues in military ethics. These issues include (but are not limited to) modern applications of classical just war theory and traditional warrior's codes, the principle of noncombatant immunity, human rights, international humanitarian law, humanitarian intervention, the ethical use of emerging military technologies, civil-military relations and society's obligations to troops and veterans, transitional justice, and the moral foundations of sustainable peace.

The study of military ethics supports long-term humanitarian goals, such as preventing unjust wars; decreasing incidents of war crimes, genocide, human rights abuses, and other atrocities produced by the dehumanizing effects of armed conflict; supporting the mental health and successful transitions of military service members and combat veterans; and fostering a lasting peace founded in justice.

Curriculum

The program curriculum is interdisciplinary, with a foundation in moral and political philosophy and international relations. Each student will complete a minimum of 30 credit hours, including a six-credit "capstone course" that will typically be completed during the summer term following a full academic year of course work.

Over a 12- to 15-month program of study (designed to facilitate the enrollment of military personnel on educational assignment and the academic student looking for an intensive program), students will study foundational topics in moral and political philosophy, together with advanced core and elective topics in military and professional ethics, military medical ethics, military law, ethical leadership, and other related subjects (including optional supplemental electives in areas such as religious studies, history, literature, journalism, political science, classics, and the arts).

Required Courses

PHIL 405	Ethics	3
PHIL 417	War and Morality	3
PHIL 436	Military Ethics, the Military Profession, and International Law	3
PHIL 484	Ethics and Public Policy	3
PHIL 501	Military Ethics MA Capstone	3 - 6

Capstone

When students begin the program, the program director will work with them individually to develop initial concepts for their specific concentrations of study and their capstones. The capstone/culminating project involves both academic research and fieldwork, and is integrated with the degree candidate's professional experience or interest. PHIL 501 Military Ethics MA Capstone will feature a summative project designed to integrate their common studies, but tailored to their individual future interests in teaching, further graduate study, or employment in public policy or foreign affairs, and may produce outcomes other than a traditional paper/thesis (such as the detailed and well-defended design of a military ethics training/education curriculum).

The outline of the project will typically be presented and defended by the spring recess of the candidate's second semester in residence, and the project itself completed over the following summer term, for graduation in August the year following matriculation. If special circumstances prevent a student from completing the program in the intended time frame, the

academic advisor will work with the student to create an alternative schedule.

Electives

Students will take a minimum of four elective courses. The selection of topic for the capstone project will dictate the selection of relevant elective courses by each student (in consultation with program faculty) to create an appropriate concentration of study. Electives may be in military and professional ethics, military medical ethics, military law, or ethical leadership, or in optional supplemental areas such as religious studies, history, literature, journalism, and the arts.

Elective courses from the College of Arts and Sciences and the School of Law include:

ARTH 436	Representations of War in Ancient Rome	3
CLSC 420	Alexander the Great: Materials and Methods	3
LAWS 4101	International Law	3
LAWS 5110	Contemporary Issues in International and Comparative Law	1
LAWS 5111	Admiralty Law	2
LAWS 5113	Counterterrorism Law	3
LAWS 5116	International Human Rights	3
LAWS 5118	International Law Research Lab	3
PHIL 411	Neuroethics	3
PHIL 416	African Political Thought	3
PHIL 422	The Science of Happiness	3
PHIL 430	Topics in Ethics	3
PHIL 433	Philosophy of Religion	3
PHIL 434	Political and Social Philosophy	3
POSC 460	Revolts and Revolutions in Global Perspective	3
POSC 451	Modern Political Thought	3
POSC 453	Political Thought and Political Change in China	3
POSC 455	Modern Political Ideologies	3
POSC 456	Transitions to Democracy and Dictatorship	3
POSC 464	Dictatorship and Democracy in Modern Latin America	3
POSC 470H	China's Foreign Policy	3
POSC 473	Politics of the European Union	3
POSC 476	United States Foreign Policy	3
POSC 477	Politics of Russia	3
POSC 479	Introduction to Middle East Politics	3
POSC 486	Making Public Policy	3
POSC 488	Politics, Policy, and the Global Environment	3
RLGN 448	Buddhism and Cognitive Science	3
RLGN 453	Hindu and Jain Bioethics: Special Focus on Women's and Gender Studies	3
RLGN 450	Jewish Ethics	3

WLIT 419	Greek Tragedy: Plays and Performance in Ancient Athens	3
LAWS 6051	Civil Rights, Human Rights, and Immigration Clinic	4

Additional elective courses will continue to be added.

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 111. What is Science? Introduction to the History and Philosophy of Science. 3 Units.

We look at historical and philosophical aspects of modern science. The objective of the course is to develop a sense of (1) what forms scientific research has taken historically, and (2) what it is about scientific research that makes it distinctive as a form of human knowledge. Offered as HPSC 111, PHIL 111 and HSTY 111.

PHIL 201. Introduction to Logic. 3 Units.

Presentation, application, and evaluation of formal methods for determining the validity of arguments. Discussion of the relationship between logic and other disciplines. Counts for CAS Quantitative Reasoning Requirement.

PHIL 203. Revolutions in Science. 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. Philosophy of Science. 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 207. Good Relationships. 3 Units.

What is a good relationship? What is the difference between everyday work relationships, friendships, and romance? What is love? What is the role of desire in relationships? What is the role of respect and of moral judgment? What can a bad relationship teach us? In this class, we explore the logic of personal relationships by focusing on the central experience of being in love. However, our approach is indirect. We begin with what we can learn from a bad relationship. In addition to philosophical and psychological reading, students design exercises that might improve a personal relationship as found in fiction or history. By thus imaginatively studying relationships in narration, they are asked to develop their own concept of a good relationship.

PHIL 221. Indian Philosophy. 3 Units.

We will survey the origins of Indian philosophical thought, with an emphasis on early Buddhist, Hindu and Jain literature. 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? And, most importantly, are the positions/arguments internally incoherent? Offered as PHIL 221 and RLGN 221. Counts for CAS Global & Cultural Diversity Requirement.

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 253. Religion and Philosophy in China. 3 Units.

This course critically examines the three principal religious and philosophical traditions of China: the Confucian, Daoist, and Chinese Buddhist traditions. Through a combination of assigned print and online readings, video clips and documentaries, class discussions, and written assignments, students explore the origins and historical developments, principal thinkers, central religious and doctrinal themes, ethics, spirituality, popular devotions, social movements, and contemporary developments of these three major religious and philosophical traditions of China. Students will consider the wider social, cultural, ethical, economic, and political dimensions of Chinese religions and philosophies generally, and themes of community and society, identity constructions, personal experiences, movements, as well as their socio-cultural reproductions in contemporary China, and where appropriate, the Chinese Diaspora in North America. Offered as CHIN 253C, ETHS 253C, PHIL 253 and RLGN 253.

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. Counts for CAS Global & Cultural Diversity Requirement. 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 and 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.

British empiricism: Bacon, Hobbes, Locke, Berkeley, and Hume. Continental rationalism: Descartes, Spinoza, and Leibniz. The critical philosophy of Kant. Recommended preparation: PHIL 101 or consent of instructor.

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 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 307. Philosophy of Biology. 3 Units.

This class looks at the philosophical dimensions of various problems in historical and contemporary evolutionary biology. Topics covered include (1) the theory of natural selection; (2) extinction; (3) human evolution; and (4) higher order evolutionary units and processes. Offered as PHIL 307 and PHIL 407.

PHIL 311. Neuroethics. 3 Units.

Ethics is traditionally a branch of Philosophy. However, research in neuroscience, psychology and behavioral economics is shedding new light on the underlying bases of ethical behavior and ethical thinking. The class will examine how this work informs and enriches traditional philosophical ethics. Topical focus of the class will depend on student interest, but potentially include: What determines how ethically we behave: our character or our situation? What role do and should emotions play in ethical thinking? Can science tell us whether utilitarian or deontological ethics is better? The dark tetrad: narcissism, Machiavellianism, psychopathy and; sadism. What is empathy and what roles does it play in generating both ethical and unethical behavior. Varieties of moral disengagement, including dehumanizing. Cognitive dissonance and the slide into unethical behavior. Radicalization into violent extremism. Promoting ethical behavior. Offered as PHIL 311 and PHIL 411.

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, ETHS 316, PHIL 316, and ETHS 416. Counts for CAS Global & Cultural Diversity Requirement. 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 318. People and Planet. 3 Units.

In this course, we study the way in which the environment is a matter of politics. Our approach is philosophical, examining the concept of politics in light of how societies shape their environment on Earth. This elucidation's aim is practical. We want to know not only what environmental politics is, but what we should do about it. Students from any major are welcome, without prerequisite. Offered as PHIL 318, POSC 318 and ESTD 318.

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 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. Offered as PHIL 322 and PHIL 422.

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. Counts for CAS Global & Cultural Diversity Requirement. 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 or PHIL 205. Offered as PHIL 330 and PHIL 430.

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 RLG 433: PHIL 101 or RLG 102. Offered as PHIL 333, RLG 333, PHIL 433, and RLG 433. Prereq: PHIL 101

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, surrogatehood, 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 5747, PHIL 335, and PHIL 435.

PHIL 336. Military Ethics, the Military Profession, and International Law. 3 Units.

The aim of this course is to provide a foundational understanding of international law as it relates to war and to explore the relationship between international law, military ethics, and the military profession. In addition to traditional lectures and seminar-style discussions, this hybrid course will feature video lectures by international experts in the field of military ethics and online assignments, discussion sections led by the Visiting Distinguished Inamori Scholar in Military Ethics. Topics covered will concern the international legal framework pertaining to the use of force, viewed through the prism of a professional code of conduct that has been forged over centuries, across different warrior cultures. Offered as PHIL 336 and PHIL 436. Prereq: PHIL 317 or PHIL 417.

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 345 and PHIL 445.

PHIL 356. Comparative Philosophy. 3 Units.

Philosophy in the etymological sense of the term, love of wisdom, subsumes ontological, ethical and epistemological inquiries 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. Counts for CAS Global & Cultural Diversity Requirement. 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 366. Brain, Mind and Consciousness: The Science and Philosophy of Mind. 3 Units.

The course introduces students to key topics in philosophy of mind from the perspective of our increasingly advanced scientific understanding of mind and brain (e.g. derived from neuroscience, psychology and cognitive science). Key philosophical topics covered include dualism, physicalism, idealism, consciousness and free will. Key scientific issues covered include methods and assumptions underlying research in psychology and neuroscience, introspection, essentialism, dehumanizing, and work on free will and consciousness. No pre-requisites other than curiosity are required, however students will benefit from having previously taken courses in philosophy, neuroscience, psychology and/or computer science. Students are expected to complete the assigned readings with care and attention, and to participate in discussion. The goal is for students to leave with an understanding of the rich ways in which different approaches can shed light on the human mind, including an appreciation of the limits of scientific inquiry into the mind. Offered as PHIL 366 and PHIL 466.

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/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: PHIL 225 or equivalent.

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 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 it 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 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 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 397. 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.

PHIL 398. Philosophy Capstone. 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 399. Philosophy Honors Thesis. 3 Units.

Under faculty supervision, students will complete a substantial thesis that demonstrates critical thinking, has clear goals, features periodic reporting of progress, and will be the subject of an oral examination as well as a 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 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 407. Philosophy of Biology. 3 Units.

This class looks at the philosophical dimensions of various problems in historical and contemporary evolutionary biology. Topics covered include (1) the theory of natural selection; (2) extinction; (3) human evolution; and (4) higher order evolutionary units and processes. Offered as PHIL 307 and PHIL 407.

PHIL 411. Neuroethics. 3 Units.

Ethics is traditionally a branch of Philosophy. However, research in neuroscience, psychology and behavioral economics is shedding new light on the underlying bases of ethical behavior and ethical thinking. The class will examine how this work informs and enriches traditional philosophical ethics. Topical focus of the class will depend on student interest, but potentially include: What determines how ethically we behave: our character or our situation? What role do and should emotions play in ethical thinking? Can science tell us whether utilitarian or deontological ethics is better? The dark tetrad: narcissism, Machiavellianism, psychopathy and; sadism. What is empathy and what roles does it play in generating both ethical and unethical behavior. Varieties of moral disengagement, including dehumanizing. Cognitive dissonance and the slide into unethical behavior. Radicalization into violent extremism. Promoting ethical behavior. Offered as PHIL 311 and PHIL 411.

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, ETHS 316, PHIL 316, and ETHS 416. Counts for CAS Global & Cultural Diversity Requirement.

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 422. 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. Offered as PHIL 322 and PHIL 422.

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. Counts for CAS Global & Cultural Diversity Requirement.

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 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 RLG 433: PHIL 101 or RLG 102. Offered as PHIL 333, RLG 333, PHIL 433, and RLG 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 435. 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, surrogatehood, 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 5747, PHIL 335, and PHIL 435.

PHIL 436. Military Ethics, the Military Profession, and International Law. 3 Units.

The aim of this course is to provide a foundational understanding of international law as it relates to war and to explore the relationship between international law, military ethics, and the military profession. In addition to traditional lectures and seminar-style discussions, this hybrid course will feature video lectures by international experts in the field of military ethics and online assignments, discussion sections led by the Visiting Distinguished Inamori Scholar in Military Ethics. Topics covered will concern the international legal framework pertaining to the use of force, viewed through the prism of a professional code of conduct that has been forged over centuries, across different warrior cultures. Offered as PHIL 336 and PHIL 436. Prereq: PHIL 317 or PHIL 417.

PHIL 445. 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 345 and PHIL 445.

PHIL 456. Comparative Philosophy. 3 Units.

Philosophy in the etymological sense of the term, love of wisdom, subsumes ontological, ethical and epistemological inquiries 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. Counts for CAS Global & Cultural Diversity Requirement.

PHIL 466. Brain, Mind and Consciousness: The Science and Philosophy of Mind. 3 Units.

The course introduces students to key topics in philosophy of mind from the perspective of our increasingly advanced scientific understanding of mind and brain (e.g. derived from neuroscience, psychology and cognitive science). Key philosophical topics covered include dualism, physicalism, idealism, consciousness and free will. Key scientific issues covered include methods and assumptions underlying research in psychology and neuroscience, introspection, essentialism, dehumanizing, and work on free will and consciousness. No pre-requisites other than curiosity are required, however students will benefit from having previously taken courses in philosophy, neuroscience, psychology and/or computer science. Students are expected to complete the assigned readings with care and attention, and to participate in discussion. The goal is for students to leave with an understanding of the rich ways in which different approaches can shed light on the human mind, including an appreciation of the limits of scientific inquiry into the mind. Offered as PHIL 366 and PHIL 466.

PHIL 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.

PHIL 475. 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 it differ from creativity in the sciences? How important is originality in art? Offered as PHIL 375 and PHIL 475.

PHIL 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.

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 501. Military Ethics MA Capstone. 3 - 6 Units.

This Military Ethics MA capstone course will feature a summative project designed to integrate the students' common studies for the MA program, while being tailored to their individual future interests in teaching, further graduate study, or employment in public policy or foreign affairs. The capstone project, culminating in a paper, may involve both academic research and fieldwork, integrated with the degree-candidate's professional experience or interest. If the student opts to write a more traditional thesis, then the paper should be approximately 10,000-20,000 words. The write up for a more project-based capstone should be approximately 5,000 words. An example of such a non-thesis project would be to design and defend a military ethics curriculum to use for PME (professional military education), domestically or internationally, including justifications of which readings, case studies, examples, theories, and principles to include, and which to exclude, and why, based on work in the field of Military Ethics. In either case, the outline of the capstone project must be presented to and accepted by a professor or instructor in the MA program who is willing to serve as the student's capstone advisor. The Master's capstone should build on the relevant elective courses by each candidate (in consultation with program faculty) around an appropriate area of concentration (e.g., military medicine and ethics; military law and ethics; psychology, history, or literature). Distribution of the 6 credits over one or two semesters will be decided through consultation with the student's MA advisor. This course will also fulfill the SAGES capstone requirement for undergraduate students enrolled in the Military Ethics MA through the IGS program. For these students, the capstone must be presented publicly either at Intersections or at an annual Philosophy Department event for other capstones and honors theses. Counts as SAGES Senior Capstone.

PHIL 599. Neuroscience of Positive Change: Using Brain Imaging to Promote the Good Life. 1.5 Unit.

The brain is the primary organ responsible for learning, decision making, social interaction, happiness, and self-regulation. Hence, neuroscience has the potential to inform numerous applied disciplines. Over the last few decades, fields from Organizational Behavior to Social Work, and Ethics to Nursing, have increasingly been drawing upon findings from neuroscience to inform their discipline. Researchers working in these disciplines are also now starting to conduct their own neuroscientific studies. However, applied researchers face an education gap that hinders progress in the productive use of neuroscience to inform their discipline. This course will provide an introduction to neuroscience methods for applied researchers, with a focus on how neuroscience can inform interventions designed to produce positive change in individuals. Students will gain an overview of the basic methods of cognitive neuroscience, effective experimental design, and the challenges of interpretation. In addition, students will be introduced to current research on the neuroscience of motivation, social-emotional competencies and behavior change. This is a graduate seminar class. Students must do the reading ahead of class. The majority of class time will be devoted to discussion.

PHIL 699. Advanced Tutorial and Dissertation for Candidates in fields related to Philosophy. 1 - 3 Units.

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

Rockefeller Building
physics.case.edu (<http://physics.case.edu>)

Phone: 216.368.4000; Fax: 216.368.4671

Glenn Starkman, Chair
glenn.starkman@case.edu

Corbin Covault, Co-Chair
corbin.covault@case.edu

The Department of Physics offers programs leading to the following undergraduate degrees: Bachelor of Arts in physics, 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.

Department Faculty

Glenn D. Starkman, PhD
(Stanford University)
Distinguished University Professor and Chair; Director, Institute for the Science of Origins; Director, Center for Education and Research in Cosmology and Astrophysics (CERCA)
Theoretical cosmology, particle physics, astrophysics

Jesse Berezovsky, PhD
(University of California, Santa Barbara)
Associate 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; education research

Edward M. Caner, MS
(Case Western Reserve University)
Instructor
Science entrepreneurship

Gary S. Chottiner, PhD
(University of Maryland)
Professor, Director of Undergraduate Studies
Experimental physics of surfaces and thin films

Craig J. Copi, PhD
(University of Chicago)
Senior Instructor
Theoretical cosmology; particle physics; astrophysics

Corbin E. Covault, PhD
(Harvard University)
Professor
Experimental high-energy astrophysics

Diana I. Driscoll, PhD
(Case Western Reserve University)
Instructor, Lab Director
Introductory physics

Pavel Fileviez Perez, PhD
(Max Planck Institute for Physics)
Assistant Professor
Particle and astro-particle physics

Xuan Gao, PhD
(Columbia University)
Professor, Director, Engineering Physics
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

Kurt Hinterbichler, PhD
(Columbia University)
Assistant Professor
Theoretical physics; gravitation; cosmology

Kathleen Kash, PhD
(Massachusetts Institute of Technology)
M. Roger Clapp University Professor in Arts and Sciences
Experimental condensed matter and mesoscopic physics; synthesis and characterization of novel nitride semiconductors

Peter J. Kernan, PhD
(Ohio State University)
Instructor
Cosmology; astrophysics

Lydia Kisley, PhD
(Rice University)
Warren E. Rupp Assistant Professor
Optical microscopy; experimental biophysics; soft condensed matter physics; interfacial/surface science

Walter R. L. Lambrecht, PhD
(Ghent University)
Professor, Faculty Distinguished Researcher
Theoretical condensed matter physics; electronic structure-based physics of materials

Michael A. Martens, PhD
(Case Western Reserve University)
Professor, Director of Graduate Studies
Medical imaging physics, high energy particle physics, accelerator physics

Harsh Mathur, PhD
(Yale University)
Professor
Theoretical Physics: Condensed matter physics, particle-astrophysics and cosmology

Benjamin Monreal, PhD
(Massachusetts Institute of Technology)
Agnar Pytte Professor in Physics; Associate Professor
Experimental particle astrophysics

Charles Rosenblatt, PhD
(Harvard University)
Professor, Ohio Eminent Scholar in Condensed Matter Physics, Faculty Distinguished Researcher
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
Experimental condensed matter physics; nonlinear optics

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
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

Idit Zehavi, PhD
(Hebrew University of Jerusalem)
Associate Professor
Astrophysics, cosmology, large-scale structure

Shulei Zhang, PhD
(University of Arizona)
Assistant Professor
Theoretical condensed matter physics: spintronics, plasmonics, and topological quantum materials

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)

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, Department 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

Adjunct Faculty

James H. Andrews, PhD

(Case Western Reserve University)

Adjunct Professor of Physics; Professor of Physics, Youngstown State University

Optical materials

Tanvir Baig, PhD

(Case Western Reserve University)

Adjunct Assistant Professor of Physics; University Hospitals Seidman Cancer Center

Medical Physics

Pierre Carlès, PhD, Habilitation

(National Polytechnic Institute, Toulouse)

Adjunct Associate Professor of Physics; Associate Professor, Université Pierre et Marie Curie, Paris

Fluid mechanics; critical behavior; stability

Michael Crescimanno, PhD

(Youngstown State University)

Adjunct Professor of Physics; Professor of Physics, Youngstown State University

Theoretical Physics

De-Chang Dai, PhD

(YangZhou University)

Adjunct Assistant Professor of Physics

Gravity, cosmology, astrophysics, particle physics, field theory

Claudia de Rham, PhD

(University of Cambridge)

Adjunct Associate Professor of Physics

Massive gravity and degravitation; Supersymmetric Large Extra Dimensions (SLED); physics of codimension-2 objects; cosmological perturbations

Jeffrey S. Dyck, PhD

(Case Western Reserve University)

Adjunct Professor of Physics ; Professor, John Carroll University

Experimental condensed matter physics

Karsten Eggert, PhD

(RWTH Aachen University)

Adjunct Professor of Physics

Experimental particle physics; cosmic ray physics; diffractive physics; TOTEM experiment at CERN

Hiroyuki Fujita, PhD

(Case Western Reserve University)

Adjunct Professor of Physics; President and CEO, Quality Electrodynamics

Hardware technology in imaging

Evalyn Gates, PhD

(Case Western Reserve University)

Adjunct Professor of Physics

Cosmology and particle astrophysics

John T. Giblin, Jr., PhD

(Yale University)

Adjunct Associate Professor of Physics

Theoretical cosmology; high energy physics and particle physics; high performance computing and gravitational waves

E. Mark Haacke, PhD

(University of Toronto)

Adjunct Professor of Physics; Professor, Wayne State University

Physics of imaging; experimental biophysics

Daeseung Kang, PhD

(Case Western Reserve University)

Adjunct Associate Professor of Physics

Experimental condensed matter; liquid crystal

Emmanuelle Lacaze, PhD

(Université Denis Diderot - Paris VII, Université Pierre et Marie Curie - Paris VI)

Adjunct Professor of Physics

Experimental condensed matter; soft materials

Timothy Peshek, PhD

(Case Western Reserve University)

Adjunct Assistant Professor of Physics

Experimental semiconductor physics

Jacob G Scott, MD, DPhil

(Case Western Reserve University)

Adjunct Professor of Physics

Biophysics

Irina Shiyankovskaya, PhD
(Institute of Physics, National Academy of Science of Ukraine)
Adjunct Assistant Professor of Physics; Kent Displays, Inc.

Thomas A. Shutt, PhD
(University of California, Berkeley)
Adjunct Professor of Physics
Experimental astrophysics

Shmaryu Shvartsman, PhD
(Tomsk State University)
Adjunct Professor of Physics; Principal Scientist, ViewRay, Inc.
General physics research and development

Mano Singham, PhD
(University of Pittsburgh)
Adjunct Associate Professor of Physics
Particle physics; physics teaching

Michael Thompson, PhD
(Case Western Reserve University)
Adjunct Assistant Professor of Physics; Director of Research, Development, and Advanced Applications, AllTech Medical Systems America
MRI signal acquisition

Andrew Tolley, PhD
(University of Cambridge)
Adjunct Associate Professor of Physics
Early universe cosmology; dark energy; gravity; extra dimensions; branes

Mesfin Tsige, PhD
(Case Western Reserve University)
Adjunct Professor of Physics
Theory of solids; polymers and other materials

Majors

Course requirements and typical schedules for the majors are summarized in the Plan of Study Grids. (To see them, click the link to the right of "Graduate" in the row along the top of this page. If you don't see the link, expand the menu by clicking the three vertical dots at the far right end of the row.)

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 36 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. 369) 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 have an opportunity to complete a year-long research 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:

PHYS 121	General Physics I - Mechanics	4
or PHYS 115	Introductory Physics I	
or PHYS 123	Physics and Frontiers I - Mechanics	
PHYS 122	General Physics II - Electricity and Magnetism	4
or PHYS 116	Introductory Physics II	
or PHYS 124	Physics and Frontiers II - Electricity and Magnetism	
PHYS 221	Introduction to Modern Physics	3
Two of the following courses:		6
PHYS 301	Advanced Laboratory Physics I	
PHYS 310	Classical Mechanics	
PHYS 313	Thermodynamics and Statistical 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	
or PHYS 336	Modern Cosmology	

PHYS 331	Introduction to Quantum Mechanics I	17
PHYS 332	Introduction to Quantum Mechanics II	
Total Units		

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, and 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 PhD dissertation.

At Case Western Reserve University, the formal requirements for the PhD 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 PhD program, the department maintains an active master's degree program to which it welcomes applications. This program involves fewer courses than the PhD program, and may or may not involve a dissertation, depending upon the student's needs and interests. The requirements for the master's degree are outlined in the relevant section below.

The department also 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 outlined in the relevant section below.

Requirements for Graduation

Requirements for the PhD degree include course work, the PhD qualifying examination, a topical oral examination, and submission and defense of a written thesis.

Requirements for the master's degree include course work and either a comprehensive examination or a thesis.

Requirements for the master's degree, Entrepreneurship Track, include course work and a thesis.

Required Courses for the PhD 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 PhD qualifying exam is based on material in these courses:

- PHYS 481 Quantum Mechanics I and PHYS 482 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 MS degree depend on whether or not the candidate completes the research and writing for a master's thesis. A total of 30 credit hours of graduate course work must be completed. The two options corresponding to Program A (with thesis) and Program B (without thesis) are as follows:

Program A: MS 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 (18 to 15 hours, of which at least 6 must be in physics)
- Thesis and oral defense

Program B: MS without Thesis

- PHYS 413 Classical and Statistical Mechanics I (3 hours)
- PHYS 423 Classical Electromagnetism (3 hours)
- Other graduate courses (24 hours, of which at least 9 must be in physics)
- Comprehensive examination (Given in May and August)

The 30 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 PhD degree may apply for and receive the MS degree on the basis of work completed toward the PhD.

Required Courses for the Master's Degree, Entrepreneurship Track

The requirements for the master's degree, Entrepreneurship Track, are 30 credit hours as follows:

- PHYS 491 Modern Physics for Innovation I (3 hours)
- PHYS 492 Modern Physics for Innovation II (3 hours)
- LAWS 5341 Commercialization and Intellectual Property Management (3 hours)
- LAWS 5366 Venture Finance & Transactions (2 hours)
- 400-level Physics Elective (6 hours)
- Restricted Elective (4 - 7 hours)
- Thesis work (PHYS 651) (6 - 9 hours)

The program is typically completed in two years.

Additional Courses for Cultural Purposes

The university permits graduate students to enroll in up to eight "fellowship" courses that are not counted toward the degree requirements for no additional charge. These may include courses in foreign language, history, philosophy, business and management, music, engineering, etc. These courses will be graded, and a grade will appear on the student's transcript.

PhD Qualifying Examination and Master's Comprehensive Examination

The PhD qualifying examination is based on advanced undergraduate material and on material covered in the introductory courses: Quantum Mechanics I & II; Classical Electromagnetism; and Classical and Statistical Mechanics I & II. Additionally, written material from the graduate laboratory course and undergraduate courses (such as relativity) may be incorporated into the qualifying exam.

A normally prepared student will be expected to take the qualifying examination in May at the end of the first year of graduate study. Students who fail the first time will speak with the chair of the qualifying committee and Director of Graduate Studies to ascertain if there is a disconnect between knowledge and performance on the exam. They will discuss with the student how best to maximize the chance of passing on the student's second attempt, generally in mid to late August. For students not passing the second time, the chair of the qualifying committee and Director of Graduate Studies will discuss the student's future plans, or the unusual possibility of a third exam.

Program B candidates for the master's degree (*not* Entrepreneurship Track) must complete a comprehensive examination. This examination

is identical to, and offered the same time as, the PhD qualifying examination. The passing grade for the master's exam is set lower than the passing grade for the PhD qualifying examination. Students who fail the first time will be allowed a second opportunity in August. Under special circumstances, students may be given an oral examination instead of a written exam.

The PhD qualifying and master's comprehensive examination consists of a written two-day examination. Several months in advance of the date for the qualifying examination, a written announcement is made which gives more specific details about the forthcoming examination. Previous examinations are on file and available to students.

Admission to PhD Candidacy

A student will be admitted to PhD 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 PhD 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 PhD 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 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.

PhD Research and Dissertation

A PhD 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 PhD is at the heart of the doctoral program. The final requirement for the PhD 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.

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.

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	
All of the following:		
PHYS 221	Introduction to Modern Physics	3
PHYS 301	Advanced Laboratory Physics I	3
PHYS 303	Advanced Laboratory Physics Seminar ³	1
PHYS 313	Thermodynamics and Statistical Mechanics	3
PHYS 331	Introduction to Quantum Mechanics I	3
Two of the following:		6
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 ¹	
PHYS 336	Modern Cosmology ¹	
PHYS 365	General Relativity	
All of the following:		
Intro Science 1 ²		3
Intro Science 2 ²		3
ENGR 131	Elementary Computer Programming	3
or CSDS 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 ³	2-3
SAGES Capstone ⁴	3-4
Breadth Requirements ⁵	12
Open electives ⁶	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.
- ² 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 program committee.
- ³ PHYS 303 + PHYS 352 can be used to satisfy this requirement.
- ⁴ PHYS 351 can be used to satisfy this 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 BA 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 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

	Units	
	Fall	Spring
General Physics I - Mechanics (PHYS 121) or Physics and Frontiers I - Mechanics (PHYS 123)	4	
Calculus for Science and Engineering I (MATH 121)	4	
Intro Science Elective I	3	
SAGES First Seminar	4	
Physics Today and Tomorrow (PHYS 166)	1	
PHED Physical Education Activities	0	
Calculus for Science and Engineering II (MATH 122)		4
General Physics II - Electricity and Magnetism (PHYS 122) or Physics and Frontiers II - Electricity and Magnetism (PHYS 124)		4
Intro Science Elective II		3
University Seminar		3
Elementary Computer Programming (ENGR 131)		3
PHED Physical Education Activities		0

Year Total: 16 17

	Units	
	Fall	Spring
Introduction to Modern Physics (PHYS 221)	3	
Calculus for Science and Engineering III (MATH 223)	3	
University Seminar	3	
Humanities/Social Science Elective	3	
Open Elective	3	
Physics Elective		3
Elementary Differential Equations (MATH 224)		3
Humanities/Social Science Elective		3
Open Elective		3
Open Elective		3
Year Total:	15	15

	Units	
	Fall	Spring
Advanced Laboratory Physics I (PHYS 301)	3	
Advanced Laboratory Physics Seminar (PHYS 303)	1	
Thermodynamics and Statistical Mechanics (PHYS 313)	3	
Introduction to Quantum Mechanics I (PHYS 331)	3	
Humanities/Social Science Elective	3	
Open Elective	2	
Physics Elective		3
Global and Cultural Diversity Elective		3
Humanities/Social Science Elective		3
Open Elective		3
Open Elective		3
Year Total:	15	15

	Units	
	Fall	Spring
Senior Physics Project (PHYS 351)	2	
Senior Physics Project Seminar (PHYS 352)	1	
Open Elective	3	
Open Elective	3	
Open Elective	3	
Open Elective	3	
Senior Physics Project (PHYS 351)		2
Senior Physics Project Seminar (PHYS 352)		1
Open Elective		3
Open Elective		3
Open Elective		3
Year Total:	15	12

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 12 credits. Many courses may be

taken at times other than those shown in the "Typical Schedule" tables below.

PHYS 121 or PHYS 123	General Physics I - Mechanics Physics and Frontiers I - Mechanics	4
PHYS 122 or PHYS 124	General Physics II - Electricity and Magnetism Physics and Frontiers II - Electricity and Magnetism	4
PHYS 203	Analog and Digital Electronics	4
PHYS 204	Advanced Instrumentation Laboratory	4
PHYS 221	Introduction to Modern Physics	3
PHYS 250	Computational Methods in Physics	3
PHYS 301	Advanced Laboratory Physics I	3
PHYS 302	Advanced Laboratory Physics II	4
PHYS 303	Advanced Laboratory Physics Seminar	1
PHYS 310	Classical Mechanics	3
PHYS 313	Thermodynamics and Statistical Mechanics	3
PHYS 324	Electricity and Magnetism I	3
PHYS 325	Electricity and Magnetism II	3
PHYS 331	Introduction to Quantum Mechanics I	3
PHYS 332	Introduction to Quantum Mechanics II	3
Choose one of the following:		3
PHYS 315	Introduction to Solid State Physics	
PHYS 320	Introduction to Biological Physics	
PHYS 326	Physical Optics	
PHYS 327	Laser Physics	
Choose one of the following:		3
PHYS 316	Introduction to Nuclear and Particle Physics	
PHYS 328	Cosmology and the Structure of the Universe	
PHYS 336	Modern Cosmology	
PHYS 365	General Relativity	
CHEM 105 or CHEM 111	Principles of Chemistry I Principles of Chemistry for Engineers	3-4
CHEM 106 or ENGR 145	Principles of Chemistry II Chemistry of Materials	3-4
ENGR 131 or CSDS 132	Elementary Computer Programming Introduction to Programming in Java	3
MATH 121	Calculus for Science and Engineering I	4
MATH 122 or MATH 124	Calculus for Science and Engineering II Calculus II	4
MATH 223 or MATH 227	Calculus for Science and Engineering III Calculus III	3
MATH 224	Elementary Differential Equations	3
SAGES First and University Seminars		10

SAGES Departmental Seminar ¹	2-3
SAGES Capstone ²	3-4
Breadth Requirements ³	12
Open Electives ⁴	16-12
PHED Physical Education (2 semesters)	0
Total Units	120

- PHYS 303 Advanced Laboratory Physics Seminar + PHYS 352 Senior Physics Project Seminar 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 BS 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 may vary, depending on course choices made by the student, but the degree requires that the total number of credits be at least 120.

Typical Schedule

First Year	Units	
	Fall	Spring
General Physics I - Mechanics (PHYS 121) or Physics and Frontiers I - Mechanics (PHYS 123)	4	
Calculus for Science and Engineering I (MATH 121)	4	
Principles of Chemistry I (CHEM 105) or Principles of Chemistry for Engineers (CHEM 111)	3-4	
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)		4
Calculus for Science and Engineering II (MATH 122)		4
Principles of Chemistry II (CHEM 106) or Chemistry of Materials (ENGR 145)		3-4
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)	3	
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

Fourth Year	Units	
	Fall	Spring
Electricity and Magnetism II (PHYS 325)	3	
Senior Physics Project (PHYS 351)	2	
Senior Physics Project Seminar (PHYS 352)	1	
Condensed Matter Physics Elective	3	
Open Elective	3	
Open Elective		
Senior Physics Project (PHYS 351)		2
Senior Physics Project Seminar (PHYS 352)		1
Particle/Astrophysics Elective		3
Humanities/Social Science Elective		3
Open Elective		
Open Elective		2-0
Year Total:	12	11-9

Total Units in Sequence: 120

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	3
PHYS 423	Classical Electromagnetism	
PHYS 324	Electricity and Magnetism I	
PHYS 325	Electricity and Magnetism II	
PHYS 482	Quantum Mechanics II	3
	M-Group 1, 2 & 3 ¹	9
	Choose one of the following:	3
PHYS 315	Introduction to Solid State Physics	
PHYS 320	Introduction to Biological Physics	
PHYS 326	Physical Optics	
PHYS 327	Laser Physics	
	Choose one of the following:	3
PHYS 316	Introduction to Nuclear and Particle Physics	
PHYS 328	Cosmology and the Structure of the Universe	
PHYS 336	Modern Cosmology	
PHYS 365	General Relativity	
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
or CSDS 132	Introduction to Programming in Java	
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
	SAGES First and University Seminars	10
	SAGES Departmental Seminar ²	2-3
	SAGES Capstone ³	3-4

Breadth Requirements ⁴	12
Open Electives ⁵	12-8
PHED 2 semesters	0
Total Units	120

- 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 120.

Typical Schedule

First Year

	Units	
	Fall	Spring
General Physics I - Mechanics (PHYS 121) or Physics and Frontiers I - Mechanics (PHYS 123)	4	
Calculus for Science and Engineering I (MATH 121)	4	
Principles of Chemistry I (CHEM 105) or Principles of Chemistry for Engineers (CHEM 111)	3-4	
Physics Today and Tomorrow (PHYS 166)	1	
SAGES First Seminar	4	
PHED Physical Education Activities	0	
General Physics II - Electricity and Magnetism (PHYS 122) or Physics and Frontiers II - Electricity and Magnetism (PHYS 124)		4
Calculus for Science and Engineering II (MATH 122)		4
Principles of Chemistry II (CHEM 106) or Chemistry of Materials (ENGR 145)		3-4
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	
Computational Methods in Physics (PHYS 250)		3
Classical Mechanics (PHYS 310)		3

Elementary Differential Equations (MATH 224)	3
Humanities/Social Science Elective	3
Open Elective	2
Year Total:	16 14

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)	3	
Methods of Mathematical Physics I (PHYS 349)	3	
Quantum Mechanics I (PHYS 481)	3	
Humanities/Social Science Elective	3	
Methods of Mathematical Physics II (PHYS 350)		3
Quantum Mechanics II (PHYS 482)		3
Global and Cultural Diversity Elective		3
Advanced Mathematics Elective		3
Electricity and Magnetism I (PHYS 324)		3
Year Total:	16	15

Fourth Year

	Units	
	Fall	Spring
Senior Physics Project (PHYS 351)	2	
Senior Physics Project Seminar (PHYS 352)	1	
Condensed Matter Physics Elective	3	
Advanced Mathematics Elective	3	
Electricity and Magnetism II (PHYS 325)	3	
Open Elective		
Senior Physics Project (PHYS 351)		2
Senior Physics Project Seminar (PHYS 352)		1
Particle/Astrophysics Elective		3
Advanced Mathematics Elective		3
Humanities/Social Science Elective		3
Open Elective		2-0
Year Total:	12	14-12

Total Units in Sequence: 120

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.

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 204	Advanced Instrumentation Laboratory	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 324	Electricity and Magnetism I	3
PHYS 325	Electricity and Magnetism II	3
PHYS 331	Introduction to Quantum Mechanics I	3
Technical Elective ¹		3
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	
CHEM 113	Principles of Chemistry Laboratory	2
ENGR 131	Elementary Computer Programming	3
or CSDS 132	Introduction to Programming in Java	
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
B-Group 1 ²		3-4
B-Group 2 ²		3-4
B-Group 3 ²		3
B-Group 4 ²		3
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		9-2
PHED 2 Semesters		0
Total Units		120

¹ Suggested technical electives include 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.

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. PHYS 320 may be used as a B-group option if it is not selected as a PHYS technical elective. 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 120.

Typical Schedule

First Year	Units	
	Fall	Spring
General Physics I - Mechanics (PHYS 121) or Physics and Frontiers I - Mechanics (PHYS 123)	4	
Calculus for Science and Engineering I (MATH 121)	4	
Principles of Chemistry I (CHEM 105) or Principles of Chemistry for Engineers (CHEM 111)	3-4	
Principles of Chemistry Laboratory (CHEM 113)	2	
Physics Today and Tomorrow (PHYS 166)	1	
SAGES First Seminar	4	
PHED Physical Education Activities	0	
General Physics II - Electricity and Magnetism (PHYS 122) or Physics and Frontiers II - Electricity and Magnetism (PHYS 124)		4
Calculus for Science and Engineering II (MATH 122)		4
Principles of Chemistry II (CHEM 106) or Chemistry of Materials (ENGR 145)		3-4
Elementary Computer Programming (ENGR 131)		3
Biogroup Elective		4
PHED Physical Education Activities		0
Year Total:	18-19	18-19

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	
Biogroup Elective	3	
University Seminar	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	
University Seminar		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)	3	
Introduction to Quantum Mechanics I (PHYS 331)	3	
Biogroup Elective	4	
Humanities/Social Science Elective	3	
Electricity and Magnetism I (PHYS 324)		3
Biogroup Elective		3
Global and Cultural Diversity Elective		3
Humanities/Social Science Elective		3
Open Elective		
Year Total:	17	12

Fourth Year	Units	
	Fall	Spring
Electricity and Magnetism II (PHYS 325)	3	
Senior Physics Project (PHYS 351)	2	
Senior Physics Project Seminar (PHYS 352)	1	
Physics Elective	3	
Humanities/Social Science Elective	3	
Open Elective		
Senior Physics Project (PHYS 351)		2
Senior Physics Project Seminar (PHYS 352)		1
Biogroup Elective		3
Humanities/Social Science Elective		3
Open Elective		2-0
Year Total:	12	11-9

Total Units in Sequence: 120

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. Its engineering science and design components prepare students to work as professional engineers.

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 to engineering courses with design experience, students

have the opportunity to conduct a senior research project under the guidance of a faculty member." The project includes a written report and participation in the senior seminar and symposium. The major requires the engineering general education requirements (<http://bulletin.case.edu/undergraduatestudies/csdegree/>) and university general education requirements (<http://bulletin.case.edu/undergraduatestudies/degreeprograms/>).

First Year	Units	
	Fall	Spring
General Physics I - Mechanics (PHYS 121) ²	4	
Calculus for Science and Engineering I (MATH 121) ¹	4	
Principles of Chemistry for Engineers (CHEM 111)	4	
SAGES First Seminar	4	
PHED Physical Education Activities	0	
General Physics II - Electricity and Magnetism (PHYS 122) ²		4
Calculus for Science and Engineering II (MATH 122) ¹		4
Elementary Computer Programming (ENGR 131)		3
Chemistry of Materials (ENGR 145)		4
Sages University Seminar		3
PHED Physical Education Activities		0
Year Total:	16	18

Second Year	Units	
	Fall	Spring
Introduction to Modern Physics (PHYS 221)	3	
Calculus for Science and Engineering III (MATH 223)	3	
Statics and Strength of Materials (ENGR 200)	3	
Introduction to Circuits and Instrumentation (ENGR 210)	4	
Sages University Seminar	3	
Instrumentation and Signal Analysis Laboratory (PHYS 208)		4
Computational Methods in Physics (PHYS 250)		3
Classical Mechanics (PHYS 310)		3
Elementary Differential Equations (MATH 224)		3
Thermodynamics, Fluid Dynamics, Heat and Mass Transfer (ENGR 225)		4
Year Total:	16	17

Third Year	Units	
	Fall	Spring
Advanced Laboratory Physics Seminar (PHYS 303)	1	
Thermodynamics and Statistical Mechanics (PHYS 313)	3	
Engineering Physics Laboratory I (PHYS 317)	3	
Introduction to Quantum Mechanics I (PHYS 331)	3	
Engineering Concentration ³	3	
Humanities/Social Science Elective	3	
Engineering Physics Laboratory II (PHYS 318)		4
Electricity and Magnetism I (PHYS 324)		3

Professional Communication for Engineers (ENGL 398) & Professional Communication for Engineers (ENGR 398)	3
Humanities/Social Science Elective	3
Engineering Concentration ³	3
Year Total:	16 16

Fourth Year

	Units	
	Fall	Spring
Introduction to Solid State Physics (PHYS 315)	3	
Electricity and Magnetism II (PHYS 325)	3	
Senior Physics Project Seminar (PHYS 352) ⁵	1	
Senior Engineering Physics Project (PHYS 353) ⁵	2	
Engineering Concentration ³	3	
Humanities/Social Science Elective	3	
Senior Physics Project Seminar (PHYS 352) ⁵		1
Senior Engineering Physics Project (PHYS 353) ⁵		2
Applied Quantum Mechanics ⁴		3
Engineering Concentration ³		3
Humanities/Social Science Elective		3
Open Elective		3
Year Total:	15	15

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. One of the Engineering Physics concentration courses must provide an engineering design experience which can be satisfied by completing one of EBME 380, ECHE 399, ECIV 398, EECS 398, EMAC 378, EMAE 360, EMAE 398 or EMSE 379.
- ⁴ EECS 321, PHYS 315, PHYS 327, PHYS 332. Students may choose to fulfill this requirement in their third year.
- ⁵ Students may elect to satisfy the SAGES capstone requirement by completing one of the SAGES capstones course in another department in the Case School of Engineering in place of PHYS 352 and PHYS 353. Students selecting this option must also complete a 3-credit hour technical elective satisfied by any 200 level or above course in the Case School of Engineering

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
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	
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	
Choose PHYS 423 or both PHYS 324 & PHYS 325		3
PHYS 423	Classical Electromagnetism	
PHYS 324	Electricity and Magnetism I	
PHYS 325	Electricity and Magnetism II	
PHYS 472	Graduate Physics Laboratory	3
MP Group 1 ¹		3
MP Group 2 ¹		3
MP Group 3 ¹		3
MP Group 4 ¹		3
CHEM 105	Principles of Chemistry I ²	3-4
or CHEM 111	Principles of Chemistry for Engineers	
CHEM 106	Principles of Chemistry II ²	3-4
or ENGR 145	Chemistry of Materials	
ENGR 131	Elementary Computer Programming ³	3
Advanced Physics Elective ⁴		3
SAGES First and University Seminars		10
SAGES Departmental Seminar ⁵		3
SAGES Capstone ⁵		3-4
Breadth Requirements ⁶		12
Open Electives ⁷		16-13
PHED 2 semesters		0
Total Units		126

Bachelor of Science in Mathematics and Physics

MATH 121	Calculus for Science and Engineering I	4
----------	--	---

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

	Units	
	Fall	Spring
General Physics I - Mechanics (PHYS 121) or Physics and Frontiers I - Mechanics (PHYS 123)	4	
Calculus for Science and Engineering I (MATH 121)	4	
Principles of Chemistry I (CHEM 105) or Principles of Chemistry for Engineers (CHEM 111)	3-4	
Physics Today and Tomorrow (PHYS 166)	1	
SAGES First Seminar	4	
PHED Physical Education Activities	0	
General Physics II - Electricity and Magnetism (PHYS 122) or Physics and Frontiers II - Electricity and Magnetism (PHYS 124)		4
Calculus for Science and Engineering II (MATH 122)		4
Principles of Chemistry II (CHEM 106) or Chemistry of Materials (ENGR 145)		3-4
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
Introduction to Modern Physics (PHYS 221)	3	
Calculus for Science and Engineering III (MATH 223) or Calculus III (MATH 227)	3	
Linear Algebra (MATH 307)	3	
University Seminar	3	
Humanities/Social Science Elective	3	
Open Elective	2	
Classical Mechanics (PHYS 310)		3
Elementary Differential Equations (MATH 224)		3
Introduction to Abstract Algebra (MATH 308)		3
MATH/PHYS Elective		3
Humanities/Social Science Elective		3
Year Total:	17	15

Third Year

	Units	
	Fall	Spring
Thermodynamics and Statistical Mechanics (PHYS 313)	3	
Introduction to Quantum Mechanics I (PHYS 331) or Quantum Mechanics I (PHYS 481)	3	
Fundamentals of Analysis I (MATH 321)	3	
MATH/PHYS Elective	3	
Humanities/Social Science Elective	3	
Open Elective	3	
SAGES Departmental Seminar		3
Introduction to Quantum Mechanics II (PHYS 332) or Quantum Mechanics II (PHYS 482)		3
Fundamentals of Analysis II (MATH 322)		3
Introduction to Complex Analysis (MATH 324)		3
Global and Cultural Diversity Elective		3
Year Total:	18	15

Fourth Year

	Units	
	Fall	Spring
SAGES Capstone	4	
Physics Elective	3	
Classical Electromagnetism (PHYS 423)	3	
MATH/PHYS Elective	3	
Open Elective	3	
Graduate Physics Laboratory (PHYS 472)		3
MATH/PHYS Elective		3
Open Elective		3
Open Elective		3-1
Year Total:	16	12-10

Total Units in Sequence: 126

Courses

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 also will 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 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.

Numerical methods, data analysis, and error analysis applied to physical problems. Use of personal computers in the solution of practical problems encountered in physics. Interpolation, roots of equations, integration, differential equations, Monte Carlo techniques, propagation of errors, maximum likelihood, convolution, Fourier transforms. Prereq: ENGR 131 or EECS 132. Prereq or Coreq: MATH 224.

PHYS 260. Introduction to Climate Change: Physics, Forecasts, and Strategies. 3 Units.

This is a one-semester introduction to the physical processes that determine Earth's past, present, and future climate. The course focuses on quantitatively understanding the human impact on climate, including the historical development of steadily more sophisticated physical models, and ever more complete data. Particular emphasis will be placed on understanding climate change projections, as well as the ethical, political, economic, and communications challenges associated with various strategies going forward. The course is appropriate for all majors. Offered as EEPS 260 and PHYS 260.

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 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.

Thermodynamic laws, entropy, and phase transitions from the quantum mechanical viewpoint. Gibbs and Boltzmann factors. Ideal, degenerate fermion, degenerate boson, photon, and phonon gases. Correlation functions and transport phenomena. Applications ranging from solid state physics to astrophysics. Prereq: PHYS 221.

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. Offered as PHYS 320 and PHYS 420. Prereq: (MATH 122 or MATH 124) and (ENGR 131 or EECS 132).

PHYS 321. Advanced Computational Methods in Physics. 3 Units.

Advanced numerical methods applied to physical problems. Use of personal computers in the solution of practical problems encountered in physics. Topics may include ordinary and partial differential equations, linear algebra, and Monte Carlo techniques. Focus is placed on developing, documenting, testing, and presenting solutions to physical problems. Standard, collaborative tools commonly used in research groups will be employed. Offered as PHYS 321 and PHYS 421. Prereq: PHYS 250.

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 relativity. 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, 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. Prereq: PHYS 331 or PHYS 481.

PHYS 328. 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 galaxy formation and evolution. Testing cosmological models. Offered as ASTR 328, PHYS 328, ASTR 428, and PHYS 428. Prereq: ASTR 222.

PHYS 329. Independent Study. 1 - 4 Units.

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, Schrodinger 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 333. Science and Technology in France. 3 Units.

The course is an exploration of the development of science and technology in France, its rise in the 18th and 19th century, its subsequent decline until the mid-20th century, and its more recent renaissance—from both a scientific and humanities perspective. A significant component will focus on the contributions of women to science in France. Students will visit historical sites such as Marie Curie's laboratory and the Foucault pendulum, as well as current research facilities such as the Soleil Synchrotron outside of Paris and the Large Hadron Collider in France/Switzerland. To supplement these site visits, readings will come from the fields of science and technology (e.g., popular journals such as Scientific American), history, and French literature—either in French or English translation as appropriate for the student and the enrollment choice. Offered as FRCH 328, FRCH 428, PHYS 333, WGST 333, WLIT 353 and WLIT 453. Counts for CAS Global & Cultural Diversity Requirement.

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 Units.

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: MATH 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 specials 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 dialogues 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. 0 - 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. Prereq: Graduate standing.

PHYS 420. 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. Offered as PHYS 320 and PHYS 420. Prereq: Graduate student standing.

PHYS 421. Advanced Computational Methods in Physics. 3 Units.

Advanced numerical methods applied to physical problems. Use of personal computers in the solution of practical problems encountered in physics. Topics may include ordinary and partial differential equations, linear algebra, and Monte Carlo techniques. Focus is placed on developing, documenting, testing, and presenting solutions to physical problems. Standard, collaborative tools commonly used in research groups will be employed. Offered as PHYS 321 and PHYS 421.

PHYS 423. Classical Electromagnetism. 3 Units.

Electromagnetic theory in the classical limit. Gauge invariance and special relativity. Applications to electrostatic, magnetostatic, and radiation problems using advanced mathematical techniques. Dielectric, magnetic, and conducting materials. Wave propagation in open and confined geometries. Radiation from accelerating charges. Cherenkov, synchrotron, and transition radiation.

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. Prereq: Graduate standing.

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. Prereq: Graduate standing.

PHYS 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 galaxy formation and evolution. Testing cosmological models. Offered as ASTR 328, PHYS 328, ASTR 428, and PHYS 428.

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. Prereq: Graduate standing.

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. Prereq: Graduate standing.

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. Prereq: Graduate standing.

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 495. Applied Patent Law. 1 Unit.

This course is designed to equip STEM students with practical knowledge of patent law, the patenting process, intellectual property (IP) strategy and IP management. Specific areas of study include: law and policy of patents, requirements to obtain a patent, the anatomy of the patent document, patent portfolio strategies, preparing and filing a patent application, IP management and monetization, managing IP in a research and development environment, sponsored research and service agreements, trade secrets and their relationship to patents, and non-disclosure agreements.

PHYS 539. Special Topics Seminar. 1 - 3 Units.

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.

Continuation of PHYS 482. The methods of quantum field theory applied to the nonrelativistic many-body problem, radiation theory, and relativistic particle physics. Second quantization using canonical and path integration techniques, constrained systems, and gauge theories. Graphical perturbative methods and graphs summation approaches. Topological aspects of field theories. Recommended preparation: PHYS 482 and consent of department.

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 601. Research in Physics. 1 - 9 Units.**PHYS 651. Thesis M.S.. 1 - 9 Units.**

(Credit as arranged.)

PHYS 666. Frontiers in Physics. 0 Unit.

Weekly colloquia given by eminent physicists from around the world on topics of current interest in physics.

PHYS 701. Dissertation Ph.D.. 1 - 9 Units.

(Credit as arranged.) Prereq: Predoctoral research consent or advanced to Ph.D. candidacy milestone.

Department of Political Science

111 Mather House

politicalscience.case.edu (<http://politicalscience.case.edu>)

Phone: 216.368.2424; Fax: 216.368.4681

Elizabeth Bolman, Interim Department Chair

The study of political science is primarily concerned with political power, governance, and the state, broadly understood. Our department offers courses that explore political behavior, institutions of government, international relations and international finance, policy-making, and protest and revolution. Our political science faculty employ a range of research methods and approaches, including game theory, elite interviewing, survey research, field and archival research, and comparative case study analysis.

Faculty specialties in the Department of Political Science include US political institutions; elections and political parties both in the United States and abroad; legislative politics and public policy; international relations with an emphasis on international political economy; the development and decline of nation-states; the politics of gender; constitutional law; public policy and public organizations; research methods; and comparative politics with regional concentrations including China, Central Asia and the Middle East, and Europe. The department offers degree programs leading to the BA, MA, and PhD.

The study of political science can build a foundation for many types of future employment. Many political science majors go on to graduate study or law school. Others pursue careers in journalism, nonprofit groups, public policy, government, or business.

Department Faculty

Elizabeth Bolman, PhD

(Bryn Mawr)

Elsie B. Smith Chair in the Liberal Arts; Professor of Art History; Chair, Department of Art History and Art, Interim Chair, Department of Political Science

Late Antique and Byzantine art

Karen Beckwith, PhD

(Syracuse University)

Flora Stone Mather Professor

Politics of gender; mass political participation; comparative political movements; democracy and representation

Justin Buchler, PhD

(University of California, Berkeley)

Associate Professor

Congress; redistricting; political strategy; parties and elections

Kathryn C. Lavelle, PhD

(Northwestern University)

Ellen and Dixon Long Professor in World Affairs

International relations; international organizations; Congress in world politics; politics of stock markets; governing institutions of national and international finance; U.S. foreign economic policy; Congress and banking policy

Kelly M. McMann, PhD

(University of Michigan)

Professor; Director, International Studies Program

Comparative politics; Central Asia; Russia and former East Bloc; democratization

Peter W. Moore, PhD

(McGill University)

M. A. Hanna Professor of Political Science; Associate Professor

Comparative politics and political economy of the Middle East and Africa

Elliot Posner, PhD

(University of California, Berkeley)

Professor

International relations; international and comparative political economy; politics of finance; international organizations; European Union

Laura Y. Tartakoff, JD, MA

(Case Western Reserve University School of Law; Tufts University)

Senior Instructor

Constitutional law; civil liberties; comparative constitutionalism

Joseph White, PhD

(University of California, Berkeley)

Luxenberg Family Professor in Public Policy; Director, Center for Policy Studies and Public Policy Program; Professor, Department of Epidemiology and Biostatistics, School of Medicine

American government; Congress; public policy; health and welfare policy; comparative politics of rich democracies

Visiting Faculty

Matthew Hodgetts, PhD

(Brown University)

Visiting Assistant Professor

Politics of climate change; environmental policy; contemporary political theory

Girma Parris, PhD

(Johns Hopkins University)

Visiting Assistant Professor

Politics of race, ethnic relations, issues of race and immigration in education, and comparative immigrant integration

Secondary Faculty

Juscelino Colares, JD, PhD
(Cornell Law School)
Professor, School of Law
International law; civil procedure

Adjunct Faculty

Karl Kaltenthaler, PhD
(Washington University)
Adjunct Assistant 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, MS
(Case Western Reserve University)
Adjunct Assistant Professor

Paul E. Schroeder, PhD
(The Ohio State University)
Adjunct Assistant Professor
Politics of China, environment, foreign

Michael Wager, JD
(New York University)
Adjunct Assistant Professor

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:

POSC 109	The U.S. Political System	3
POSC 160	Introduction to Comparative Politics	3
POSC 172	Introduction to International Relations	3
Six POSC courses at the 300 level		18
POSC 396	Senior Project SAGES Capstone	3
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 Senior Project SAGES Capstone, 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/#accelerationtowardgraduatedegreeext>) in political science offers students the opportunity to earn an MA, in addition to their BA, 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. 340) section of the bulletin for details.

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 GRE results with minimum scores of 153 on Verbal (or 500 if taken before August 1, 2011), 144 on Quantitative (or 500 if taken before August 1, 2011), and 4.5 on Analytical sections. 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 course work, 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:

One course in the area of American government and politics	3
One course in the area of comparative politics	3
One course in the area of international relations	3
POSC 449 Political Science Research Methods	3
Total Units	12

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 course work 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, she or he will be separated from the department. Please note that university regulations require that students be registered for course work 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 POSC 701 Dissertation Ph.D. credit. The required 45 hours of doctoral courses taken before dissertation credits must be distributed as follows:

12 hours in a primary subfield (American, comparative, or international relations)	12
9 hours in secondary subfield (one of the remaining two fields)	9
6 hours in the remaining subfield	6
6 hours in Research Methods:	6
POSC 449 Political Science Research Methods	
12 hours of electives	12
Total Units	45

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 course work. The graduate studies director will set distribution requirements on an individual basis, reflecting the course work 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 course work. 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 course work, 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 course work, 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 in 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 course work.

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. Counts for CAS Global & Cultural Diversity Requirement.

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 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. Congress in an Era of Polarization. 3 Units.

A study of Congress in the modern era with emphasis on the development of polarization, procedural changes, conflict between the legislative and executive branches during divided government, and the current state of representation. Offered as POSC 310 and POSC 410.

POSC 318. People and Planet. 3 Units.

In this course, we study the way in which the environment is a matter of politics. Our approach is philosophical, examining the concept of politics in light of how societies shape their environment on Earth. This elucidation's aim is practical. We want to know not only what environmental politics is, but what we should do about it. Students from any major are welcome, without prerequisite. Offered as PHIL 318, POSC 318 and ESTD 318.

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 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. Counts for CAS Global & Cultural Diversity Requirement.

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. Comparative Political Violence. 3 Units.

This is a non-standard, simulation based course analyzing the causes and processes of political violence in comparative perspective. The course begins by engaging some classic philosophical work on power, conflict, and violence. It then moves to specific cases drawn at different historical periods and from across the world (North America, Asia, Africa, and the Middle East). For each case, students are organized into groups representing actual political actors. Collaborative research and written assignments serve to prepare each group for an in-class simulation exercise. Simulations vary in format and goals but each comprises a group grade and an individual written project. Offered as POSC 334 and POSC 434. Counts for CAS Global & Cultural Diversity Requirement.

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 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, Power, and Politics. 3 Units.

Women, Power, 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 the political meanings and import of "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 the meanings of "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, 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 353. Political Thought and Political Change in China. 3 Units.

"No state is forever strong or forever weak," said Han Feizi, China's great legalist philosopher. He believed that as a country's conditions changed, the laws and institutions had to change to meet these new circumstances. China today faces new circumstances that have caused deep and broad challenges to its people. This has prompted serious debate among intellectuals, leaders, and average citizens about the possibility for and direction of political reform. But what might that reform look like, and how would it be conceived, if it could overcome the current barriers? This seminar will provide a fuller understanding of China's potential for political change by examining Chinese political thought from Confucius, Mencius and Han Feizi through Mao Zedong and Deng Xiaoping. These and other political philosophies have influenced China's political culture, which will influence the form of any change. Offered as POSC 353 and POSC 453.

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. Counts for CAS Global & Cultural Diversity Requirement.

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? 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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Social Justice Issues in Latin America. 3 Units.

This course explores ethnicity, gender, and religion in Latin American politics and society, and then tackles revolution, democracy, and populism. Throughout, the region's history, geography, and culture are taken into account—for example, the European and indigenous legacies in Mexico and Perú, Bolivia, Chile, and Ecuador; the Asian presence in Perú 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 Fernández de Kirchner, Costa Rica's Laura Chinchilla, and Brazil's Dilma Rousseff. Liberation Theology and the current Pope's worries about the declining number of Catholics in the region are also addressed. Today's multiparty democracy in Mexico, Hugo Chávez's legacy in Venezuela, and Cuba's international humanitarian aid and ideological aims would not be possible without revolution(s) and populism. They are inevitably intertwined with ethnicity, gender, and religion. This course aims to encourage a better understanding of Latin America and its relation to the rest of the world. Offered as ETHS 369, POSC 369 and POSC 469. Counts for CAS Global & Cultural Diversity Requirement.

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 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 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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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 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 sea bed. 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. Counts as SAGES Departmental Seminar.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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 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. Counts for CAS Global & Cultural Diversity Requirement.

POSC 382A. Public Policy in Child Development. 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. Doing Government Work: Public Administration in the U.S.. 3 Units.

This course focuses on how governments, particularly governments in the United States, do their work. The topic is often called "public administration," or "implementation," or "bureaucratic politics." It involves what James Q. Wilson calls government "operators" such as teachers, public health doctors, agricultural extension agents, grant administrators and Seal teams. Their actions depend on their own values; conflict among political authorities, and on what is needed to perform specific tasks. We will begin by discussing the challenges of organizing to do anything, or organization theory; turn to the peculiar political context of administration in the United States; and apply these understandings to specific government activities. Students should emerge with a better understanding of why government agencies do what they do, and why they succeed or fail. 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 ESTD 388, POSC 388 and 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 Units.

Study of a topic of particular interest, and/or independent academic work associated with 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 or from the department's webpage.

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 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. Congress in an Era of Polarization. 3 Units.

A study of Congress in the modern era with emphasis on the development of polarization, procedural changes, conflict between the legislative and executive branches during divided government, and the current state of representation. Offered as POSC 310 and POSC 410.

POSC 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.

POSC 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.

POSC 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.

POSC 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.

POSC 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.

POSC 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. Counts for CAS Global & Cultural Diversity Requirement.

POSC 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.

POSC 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.

POSC 434. Comparative Political Violence. 3 Units.

This is a non-standard, simulation based course analyzing the causes and processes of political violence in comparative perspective. The course begins by engaging some classic philosophical work on power, conflict, and violence. It then moves to specific cases drawn at different historical periods and from across the world (North America, Asia, Africa, and the Middle East). For each case, students are organized into groups representing actual political actors. Collaborative research and written assignments serve to prepare each group for an in-class simulation exercise. Simulations vary in format and goals but each comprises a group grade and an individual written project. Offered as POSC 334 and POSC 434. Counts for CAS Global & Cultural Diversity Requirement.

POSC 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 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, Power, and Politics. 3 Units.

Women, Power, 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 the political meanings and import of "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 the meanings of "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, 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 453. Political Thought and Political Change in China. 3 Units.

"No state is forever strong or forever weak," said Han Feizi, China's great legalist philosopher. He believed that as a country's conditions changed, the laws and institutions had to change to meet these new circumstances. China today faces new circumstances that have caused deep and broad challenges to its people. This has prompted serious debate among intellectuals, leaders, and average citizens about the possibility for and direction of political reform. But what might that reform look like, and how would it be conceived, if it could overcome the current barriers? This seminar will provide a fuller understanding of China's potential for political change by examining Chinese political thought from Confucius, Mencius and Han Feizi through Mao Zedong and Deng Xiaoping. These and other political philosophies have influenced China's political culture, which will influence the form of any change. Offered as POSC 353 and POSC 453.

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. Counts for CAS Global & Cultural Diversity Requirement.

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 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? 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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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 469. Social Justice Issues in Latin America. 3 Units.

This course explores ethnicity, gender, and religion in Latin American politics and society, and then tackles revolution, democracy, and populism. Throughout, the region's history, geography, and culture are taken into account—for example, the European and indigenous legacies in Mexico and Perú, Bolivia, Chile, and Ecuador; the Asian presence in Perú 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 Fernández de Kirchner, Costa Rica's Laura Chinchilla, and Brazil's Dilma Rousseff. Liberation Theology and the current Pope's worries about the declining number of Catholics in the region are also addressed. Today's multiparty democracy in Mexico, Hugo Chávez's legacy in Venezuela, and Cuba's international humanitarian aid and ideological aims would not be possible without revolution(s) and populism. They are inevitably intertwined with ethnicity, gender, and religion. This course aims to encourage a better understanding of Latin America and its relation to the rest of the world. Offered as ETHS 369, POSC 369 and POSC 469. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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 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. Counts as SAGES Departmental Seminar.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Doing Government Work: Public Administration in the U.S.. 3 Units.

This course focuses on how governments, particularly governments in the United States, do their work. The topic is often called "public administration," or "implementation," or "bureaucratic politics." It involves what James Q. Wilson calls government "operators" such as teachers, public health doctors, agricultural extension agents, grant administrators and Seal teams. Their actions depend on their own values; conflict among political authorities, and on what is needed to perform specific tasks. We will begin by discussing the challenges of organizing to do anything, or organization theory; turn to the peculiar political context of administration in the United States; and apply these understandings to specific government activities. Students should emerge with a better understanding of why government agencies do what they do, and why they succeed or fail. 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 ESTD 388, POSC 388 and 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 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 495. Independent Study. 3 Units.

Graduate level independent study taken for a grade.

POSC 601. Individual Investigation. 1 - 6 Units.

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.. 1 - 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 Units.

(Credit as arranged.) Prereq: Predoctoral research consent or advanced to Ph.D. candidacy milestone.

WASH (WASH)

WASH 2A. Washington Center Internship. 9 Units.

Credit for semester-length internship experience taken as part of the Washington Center Program during Fall or Spring terms.

WASH 2B. Washington Center - Politics and Public Policy Course. 3 Units.

Credit for the Politics and Public Policy course taken as part of the Washington Center Program.

WASH 2C. Washington Center - Portfolio. 3 Units.

Credit for the student's portfolio taken as part of the Washington Center Program.

WASH 2D. Washington Center Summer Internship. 3 Units.

Credit for semester-length internship experience taken as part of the Washington Center Program during Summer term.

Post-baccalaureate Readiness Instruction for bioMedical Education (PRIME) Certificate Program

www.case.edu/medicine/prime/ (<http://www.case.edu/medicine/prime/>)

Phone: 216.368.5296

Anthony Saar, MEd, Program Director
prime@case.edu

PRIME is a post-baccalaureate certificate (non-degree) program for students who need additional preparation to have a competitive application for MD or DO programs.

This program is designed for two types of students:

- Career changers – students who have not yet completed all their pre-med requirements
- Academic enhancers – students who need to improve their undergraduate GPA and their foundation in key pre-med content

Key features of this program include:

- A highly flexible and individually tailored program of study providing each student the preparation that they need to be competitive applicants
- A dedicated program director who has experience advising for medical school admissions and who meets regularly with students one-on-one
- Problem-based Clinical Inquiry (IQ) coursework designed to give students exposure to medical terminology and clinical reasoning and develop professional growth via self-reflection
- Specialized Medical College Admissions Test (MCAT) preparatory course designed to comprehensively review all MCAT content areas, as well as testing methods.
- Diverse opportunities for shadowing, volunteering, and research in affiliation with four world-class health systems (Cleveland Clinic, University Hospitals Cleveland Medical Center, Louis Stokes Cleveland VA Medical Center, and MetroHealth Medical Center)
- Opportunity to interview with the CWRU School of Medicine for select students

The PRIME program is highly flexible. To earn the certificate, students must complete at least 24 credit hours. A program of study must be approved by the program director. Each student will work closely with the program director to tailor the program to their needs. Based on their previous coursework, some students may need to take more than 24 credit hours to complete the prerequisite courses for medical school and earn the PRIME certificate. This program can be completed in 1-2 years, depending on a student's individual needs.

Required Program Coursework

MGRD 310	Introduction to Clinical Inquiry (IQ)	3
MGRD 311	Introduction to Clinical Inquiry (IQ) II	3

Required Medical School Coursework

BIOC 307	Introduction to Biochemistry: From Molecules To Medical Science	4
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
or BIOL 216	Development and Physiology	
BIOL 216L	Development and Physiology Lab	1
CHEM 105	Principles of Chemistry I	3
CHEM 106	Principles of Chemistry II	3
CHEM 113	Principles of Chemistry Laboratory	2
CHEM 223	Introductory Organic Chemistry I	3
CHEM 224	Introductory Organic Chemistry II	3

CHEM 233	Introductory Organic Chemistry Laboratory I	2
CHEM 234	Introductory Organic Chemistry Laboratory II	2
MATH 125	Math and Calculus Applications for Life, Managerial, and Social Sci I	4
MATH 126	Math and Calculus Applications for Life, Managerial, and Social Sci II	4
or STAT 201	Basic Statistics for Social and Life Sciences	
PHYS 115	Introductory Physics I	4
PHYS 116	Introductory Physics II	4
PSCL 101	General Psychology I	3
SOCI 101	Introduction to Sociology	3

Students who have completed some of the required courses prior to the start of the program would be eligible for exemption from taking them for the certificate. Depending on their grades, they may waive the required courses with the program director's approval. Students may also elect to retake these courses for reference and/or to improve their undergraduate GPA.

Elective Coursework

In consultation with the program director, students will develop the best program of study for their needs. Typically, if a student has already taken the medical school prerequisites but needs to improve their overall undergraduate GPA, taking upper-level undergraduate courses would show more rigor than retaking lower-level courses. With successful grades, a student's undergraduate GPA will also improve.

Students may take additional elective coursework (<http://casemed.case.edu/gradprog/PRIME/electives.php>) across the university with program director and instructor approval. Although science and math classes will be the primary focus for most students, some students may also seek to take graduate coursework to demonstrate academic rigor. Further, some students may also elect to take other courses based on interests or a desire to improve technical skills (such as writing or language skills).

Public Policy Program

113 Mather House
artsci.case.edu/public-policy/ (<http://artsci.case.edu/public-policy/>)
 Phone: 216.368.2424
 Joseph White, Program Director
joseph.white@case.edu

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.

Program Advisory Committee

Joseph White, PhD
Luxenberg Family Professor in Public Policy, Department of Political Science; Director, Center for Policy Studies; Director, Public Policy Program

Brian Gran, JD
Professor, Department of Sociology

Susan Helper, PhD
AT&T Professor of Regional Economic Development, Department of Economics, Weatherhead School of Management

Peter Shulman, PhD
Associate Professor, Department of History

Undergraduate Programs

Minor

One of the following:	3
POSC 386	Making Public Policy
POSC 383	Health Policy and Politics in the United States
POSC 306	Interest Groups in the Policy Process
The following:	3
ECON 102	Principles of Microeconomics
One of the following:	3
POSC 308	The American Presidency
POSC 310	Congress in an Era of Polarization
POSC 323	Judicial Politics
POSC 384	Ethics and Public Policy
POSC 385	Doing Government Work: Public Administration in the U.S.
Two courses on a particular field of public policy *	6
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 website (<https://artsci.case.edu/public-policy/public-policy-field-and-course-examples/>).

Department of Religious Studies

243 Tomlinson Hall
<https://religion.case.edu/>
 Phone: 216.368.2210
 Timothy Beal, Department Chair
timothy.beal@case.edu

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. Through the Reisacher Summer Fellowship program, majors and minors may apply for support for summer research projects and internships.

Where appropriate, courses are designed to utilize digital tools and other emerging technologies. Many courses also involve visits to the cultural institutions of University Circle and religious sites throughout 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.

Department Faculty

Timothy Beal, PhD
(Emory University)

Florence Harkness Professor of Religion and Chair

Biblical studies; environmental studies; cultural studies; gender studies; religion and technology; machine learning and data science

Joy R. Bostic, PhD
(Union Theological Seminary)

Associate Professor; Director, Minor in African and African American Studies
African-American religion; women and religion; U.S. urban religion

Brian J. Clites, PhD
(Northwestern University)

Instructor

American Religious History

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)

Associate Professor

Anthropology of religion; Islamic studies

Deepak Sarma, PhD
(University of Chicago)

Professor

Hinduism; Indian philosophy; philosophy of religion; method and theory

Jonathan Y. Tan, PhD

(The Catholic University of America)

Archbishop Paul J. Hallinan Professor in Catholic Studies; Associate Professor

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

Emeriti

Alice Bach

Archbishop Paul J. Hallinan Professor Emerita of Catholic Studies

Peter J. Haas

Abba Hillel Silver Professor Emeritus of Jewish Studies

Visiting Faculty

Alanna Cooper, PhD

(Boston University)

Abba Hillel Silver Chair of Jewish Studies; Visiting Assistant Professor

Contemporary Jewish life; Jewish dispersion, loss, and memory; material culture; the American Jewish community

Major

Students majoring in religious studies must complete a minimum of 30 semester hours. The program is designed with three main learning objectives in mind: (a) to provide a solid grounding in the theories, methods, and critical questions of academic religious studies; (b) to ensure a depth and breadth of understanding in a diverse range of religious traditions; and (c) to enable students to pursue a particular focus at an advanced level. The requirements for the major are as follows:

RLGN 101	Religion and Culture	3
RLGN 201	Interpreting Religion: Approaches and Current Issues *	3
Seven electives, with at least three being 300-level, to be determined in consultation with one's religious studies advisor **		21
ONE CAPSTONE EXPERIENCE:		
RLGN 399	Major/Minor Seminar	3
OR		
RLGN 395	Honors Research II	3

- * RLGN 201 Interpreting Religion: Approaches and Current Issues focuses on the history and development of the field of academic religious studies, canonical theories and methodologies, and current academic approaches, issues, and debates. This course replaces the former RLGN 299.
- ** Up to six of these elective credit hours may be taken outside the Department of Religious Studies, provided that the courses relate to the overall character of the major.

Integrated Graduate Studies

The Integrated Graduate Studies (IGS) Program (<http://bulletin.case.edu/undergraduatestudies/gradprofessional/#accelerationtowardgraduatestudies>) in Religious Studies offers students the opportunity to earn credit toward the MA while also completing requirements for the BA. Students must apply to the School of Graduate Studies 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 its policies, rules, and regulations.

For more information and eligibility requirements, see the IGS Program website. (<http://bulletin.case.edu/undergraduatestudies/gradprofessional/#accelerationtowardgraduatestudies>)

Minor in Religious Studies

A minor in religious studies requires at least 15 credit hours, including the following:

RLGN 101	Religion and Culture	3
OR		
RLGN 201	Interpreting Religion: Approaches and Current Issues	3
THREE ELECTIVES (9 credits)		
RLGN 399	Major/Minor Seminar	3

Minor in African and African American Studies

The minor in African and African American studies (AFST), directed by Associate Professor Joy R. Bostic, provides students with a comprehensive, interdisciplinary academic program that focuses on 1) critical race theory; 2) African and African diasporic history, culture, and literature; and 3) the religious, political, and social dimensions of Black life. The program examines subject matter related to African contexts (both the historical study of such contexts and the study of current populations), as well as African diasporic cultures (including historic and contemporary migrations), with a focus on the African diasporic presence in the Americas. Thus, courses offered in the AFST minor address the experience of African Americans but also more broadly explore the global Black experience and its relationship to Black life in the Americas.

Minor Requirements (15 total credits required)

1. Introductory Course:

HSTY 252A	Introduction to African-American Studies	3
-----------	--	---

2. One course from each of the following three domains:

History

HSTY 135	Introduction to Modern African History	3
----------	--	---

HSTY 262	African-American History Since 1945	3
HSTY 318	History of Black Women in the U.S.	3
HSTY 381	City as Classroom	3
HSTY 393	Advanced Readings in the History of Race	3
HSTY 395	History of Medicine	3
HSTY 399	Advanced Readings in Black History	3

Culture, Literature, and Religious Life

ENGL 363H	African-American Literature	3
ENGL 365N	Topics in African-American Literature	3
ETHS 295	The Francophone World	3
ETHS 316	African Political Thought	3
MUGN 212	History of Rock and Roll	3
MUHI 313	American Popular Song to 1950	3
MUHI 314	Blues Histories and Cultures	3
MUHI 315	History of Jazz and American Popular Music	3
RLGN 151	Introducing Africana Religions	3
RLGN 222	African-American Religions	3
RLGN 265	Malcolm and Martin	3
RLGN 302	The Lemonade Class: Religion, Race, Sex and Black Music	3
RLGN 304	Representations of Black Women and Religion in Film	3
RLGN 311	Representations of Black Religion in Film	3

Social and Behavioral Sciences

POSC 366	Government and Politics of Africa	3
POSC 369	Social Justice Issues in Latin America	3
SOCI 202	Race and Ethnic Minorities in The United States	3
SOCI 328	Urban Sociology	3
SOCI 366	Racial Inequality and Mass Imprisonment in the US	3

3. One elective, selected from one of the three domains above: History; Culture, Literature, and Religious Life; or Social and Behavioral Sciences

Please note that no more than 6 credit hours may overlap between this minor and requirements for another minor.

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	Units	
	Fall	Spring
Foundational Readings in Religious Studies (RLGN 400)	3	
One 400-level RLGN course	3	
An elective dealing with the method and theory in the study of religion	3	
An elective dealing with method and theory in the study of religion		3
Independent Study with thesis advisor to prepare proposal. To be approved by the graduate faculty by the beginning of the third semester.		3
One 400-level RLGN course		3
Year Total:	9	9
Second Year		
	Units	
	Fall	Spring
One 400-level RLGN course	3	
Thesis M.A. (RLGN 651) (or elective)	3	
Thesis M.A. (RLGN 651)	3	
Thesis M.A. (RLGN 651)		3
Year Total:	9	3
Total Units in Sequence:	30	

Courses

RLGN 101. Religion and Culture. 3 Units.

This course introduces students to the study of religion by examining religious practices within a variety of cultural and historical contexts around the world. The course invites students to think comparatively and critically about the role of religion within broader cultural discourses (e.g., gender, politics, and the environment). Instead of surveying what were formerly called the "world's great religions," this course builds religious literacy by examining religious practices within particular geographical and thematic areas. Through comparative case studies drawn from a diverse range of "non-western" cultures, students will learn about religions and spiritualities across the globe. These cultural touchstones will build core literacy in other cultures, positioning students to engage more fully in the religious and cultural diversity that they will encounter in their own lives and careers. Alongside these geographic case studies, the course will also examine key themes in the study of religion, such as diasporic transnationalism, liberation theology, and ritual practice. We will use these themes to tease out and debate some of the core theoretical and methodological challenges in the study of religion, including postcolonial critiques of the origin and history of the field of religious studies itself. To be clear, religion is our subject, not our approach. Although students will find opportunities to reflect on their own spirituality/disbelief, the course does not presume any particular religious or non-religious perspective. Indeed, the study of religion is itself concerned not only with the world's religious traditions, but also with contemporary questions of skepticism, science, disbelief, and secularity. Evaluation will be based on class preparation and participation, regular short papers, a midterm exam, and a final take-home essay exam. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

RLGN 151. Introducing Africana Religions. 3 Units.

This "topics course" offers an introduction to the academic study of Africana Religions. Whether approached through a particular theme or as a general historical introduction, each section of this course provides students with a general introduction to the academic study of religion and basic religious literacy in religions of people of African origins in sub-Saharan African, the Caribbean, Europe, and the Americas and thus will explore forms of these traditions in a diversity of cultural contexts. Section topics could include, but are not limited to: Introducing Africana Religions: The Black Church in the U.S., Introducing Africana Religions: Yoruba Ifa Traditions, Introducing Africana Religions: Orisha Traditions in Latin America and the Caribbean, Introducing Africana Religions: African American Religions, Introducing Africana Religions: U.S. African-derived Religions. Students may repeat the course for credit (up to 6 credits), provided that the two sections are different. Offered as AFST 151 and RLGN 151. Counts for CAS Global & Cultural Diversity Requirement.

RLGN 152. Introducing Buddhism. 3 Units.

This "topics" course offers an introduction to the academic study of Buddhism. Whether approached through a particular theme or as a general historical introduction, each section of this course provides students with a general introduction to the academic study of religion and basic religious literacy in Buddhist tradition, exploring forms of it in a diversity of cultural contexts in Japan and throughout the world. Section topics could include, but are not limited to: Buddhist Ethics, Buddhist Theory of Mind, The Sutras. Students may repeat the course for credit (up to 6 credits), provided that the two sections are different. Counts for CAS Global & Cultural Diversity Requirement.

RLGN 153. Introducing Chinese Religions. 3 Units.

This "topics" course offers an introduction to the academic study of Chinese religions. Whether approached through a particular theme or as a general historical introduction, each section of this course provides students with a general introduction to the academic study of religion and a basic religious literacy in the nuances and complexities in Chinese religions within various historical and socio-cultural contexts. Section topics might include, but are not limited to: Confucianism, Daoism, Chinese Buddhism, Gender and Sexuality in Chinese Religions. Students may repeat the course for credit once (two times total for 6 credits), provided that the two sections are different. Offered as RLGN 153, ETHS 153 and CHIN 253. Counts for CAS Global & Cultural Diversity Requirement.

RLGN 154. Introducing Hinduism. 3 Units.

This "topics" course offers an introduction to the academic study of Hinduism. Whether approached through a particular theme or as a general historical introduction, each section of this course provides students with a general introduction to the academic study of religion and basic religious literacy in Hinduism, exploring forms of it in a diversity of cultural contexts. Section topics could include, but are not limited to: The Epics, Ritual, Contemporary Practices. Students may repeat the course for credit (up to 6 credits), provided that the two sections are different. Offered as RLGN 154 and WLIT 154. Counts for CAS Global & Cultural Diversity Requirement.

RLGN 155. Introducing Jainism. 3 Units.

This "topics" course offers an introduction to the academic study of Jainism. Whether approached through a particular theme or as a general historical introduction, each section of this course provides students with a general introduction to the academic study of religion and basic religious literacy in Jainism exploring forms of it in a diversity of cultural contexts. Section topics could include, but are not limited to: Epics and Narratives, Ritual, Contemporary Issues. Students may repeat the course for credit (up to 6 credits), provided that the two sections are different. Counts for CAS Global & Cultural Diversity Requirement.

RLGN 171. Introducing Christianity. 3 Units.

This "topics" course offers an introduction to the academic study of Christianity. Whether approached through a particular theme or as a general historical introduction, each section of this course provides students with a general introduction to the academic study of religion and a basic religious literacy in Christianity, exploring forms of it in a diversity of cultural contexts throughout the world. Section topics might include, but are not limited to: The Black Church, The Apocalyptic Imagination, Latin American Liberation Theology. Students may repeat the course for credit once (two times total for 6 credits), provided that the two sections are different. Counts for CAS Global & Cultural Diversity Requirement.

RLGN 172. Introducing Islam. 3 Units.

This "topics" course offers an introduction to the academic study of the beliefs, practices, sacred texts, and intellectual traditions of Islam. Whether approached through a particular theme or as a general historical introduction, each section of this course provides students with a general introduction to the academic study of religion and basic religious literacy in Islamic tradition, including investigations into how Muslim institutions developed in relation to diverse socioeconomic and cultural conditions, including Africa, the Americas, the Middle East, and Europe. Section topics could include, but are not limited to: Women and Gender, Faith, Politics, and Modernity, Pilgrimages, Prophecy, and Sacred Places. Students may repeat the course for credit (up to 6 credits), provided that the two sections are different. Counts for CAS Global & Cultural Diversity Requirement.

RLGN 173. Introducing Judaism. 3 Units.

This "topics" course offers an introduction to the academic study of Judaism. Whether approached through a particular theme or as a general historical introduction, each section of this course provides students with a general introduction to the academic study of religion and basic religious literacy in Jewish religious tradition, exploring forms of it in a diversity of cultural contexts around the world. Section topics could include, but are not limited to: Festivals and Holy Days, Women and Gender, Jewish Ethics. Students may repeat the course for credit (up to 6 credits), provided that the two sections are different. Offered as RLGN 173 and JDST 173. Counts for CAS Global & Cultural Diversity Requirement.

RLGN 191. Introduction to Sanskrit. 3 Units.

This class is an introduction to Sanskrit language and culture. Students will learn basic Sanskrit grammar and syntax, both of which are inextricably linked to the culture of ancient South Asia. There are no prerequisites and the course does not presuppose any familiarity with India or Indian languages. Counts for CAS Global & Cultural Diversity Requirement.

RLGN 201. Interpreting Religion: Approaches and Current Issues. 3 Units.

Introduction to academic study of religion, exploring the history and development of the field, important theories and methodologies, and current issues, debates, and horizons of research. The course is foundational for majors and minors in religious studies but also open to other interested students who may find it valuable for their work in other fields of study. Particular readings and other assignments will be determined by the designated instructor. Students are expected to attend class regularly, complete readings and other assignments, and participate actively in class discussions and other activities.

RLGN 203. Religious Studies for Future Healthcare Professionals. 3 Units.

This class will provide future healthcare professionals with the basic knowledge of religious studies and of topics pertaining to death and dying, sickness, suffering, and so on. Students will also gain a basic knowledge of related bioethical issues as they are found in the world's religions. The primary aim of the course is to offer future healthcare professionals an awareness of the diverse religious backgrounds of patients and issues that they might encounter and to provide a basic understanding of religious studies in the process. Counts for CAS Global & Cultural Diversity Requirement.

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 traditioning 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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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 213. Jews and Judaism. 3 Units.

This course provides an introduction to Jewish religion, culture, history, and life. It does not presuppose any previous study of Judaism or experience with Judaism, and it prepares students for additional coursework in Judaic studies, Jewish history, or religious studies with an emphasis on Judaism. Required for the minor in Judaic Studies. Offered as JDST 101 and RLGN 213. Counts for CAS Global & Cultural Diversity Requirement.

RLGN 215. Religion In America. 3 Units.

This course is an introduction to American religions, with a particular focus on religious diversity in the United States. As we examine the myriad beliefs and practices of America's religious communities, we will pay close attention to how religion and culture have shaped each other from the 1600's to today. To explore the theme of religious diversity, we will take advantage of Cleveland's rich religious history with visits to local religious institutions and historical sites, including churches, mosques, synagogues and Hindu and Buddhist temples. Along the way we will consider the role of religious spaces and institutions in shaping community, identity, and politics in Northeast Ohio and beyond. Counts for CAS Global & Cultural Diversity Requirement.

RLGN 216. Hinduism. 3 Units.

We will survey the basic beliefs and practices of Hinduism(s) as found in India and across the world, with an emphasis on primary sources and contemporary complexities. The class will focus on the religion(s) of cultures outside the United States. It will address in a substantive way ethnic, gender, sexual, religious, or other cultural practices outside the United States, so as to provide students with fresh perspectives on their own cultural assumptions, traditions, and experiences. Our study will range from close readings of classical texts, to observing and reflecting on contemporary practices and movies, to careful study of images and artifacts on display at the Cleveland Museum of Art. We will apply a variety of methods and tools to investigate class materials, from a number of different disciplines, including sociology, history, theology, anthropology, and psychology. Students will build a very strong foundation in the primary sources in this class. Counts for CAS Global & Cultural Diversity Requirement.

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 Buddhist thought and practice, with a focus on the Theravada and Mahayana Buddhist traditions that developed in India, and the spread and transformations of these traditions in south, southeast, and east Asia. We also consider Buddhist ethical perspectives. Course readings include translations of important Buddhist texts and contemporary scholarly interpretations of Buddhist ideas and practices. Visual and other media augment our study. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

RLGN 221. Indian Philosophy. 3 Units.

We will survey the origins of Indian philosophical thought, with an emphasis on early Buddhist, Hindu and Jain literature. 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? And, most importantly, are the positions/arguments internally incoherent? Offered as PHIL 221 and RLGN 221. Counts for CAS Global & Cultural Diversity Requirement.

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 AFST 222, 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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

RLGN 227. Women, Gender, and Islam. 3 Units.

Women and gender are central to understanding Muslim societies, past and present. From debates about the veil to the wars in Iraq and Afghanistan, gendered concerns have been especially prominent in contemporary debates about the status of Islam in the modern world. How have Muslim thinkers interpreted Islamic scriptures with respect to topics such as marriage, child custody, inheritance, and sexuality? How is masculinity and femininity constructed? In what ways do their interpretations reflect the political, economic, and social conditions in which they lived? How does gender structure authority and power in Muslim communities? How and why have Muslim women become so important in contemporary debates over religious and national identity around the world? This course begins by examining the position of women and gender in the foundational Islamic texts, the Qur'an and Sunna (the practice of the Prophet Muhammad), and pre-modern interpretations of them. Then we will explore marriage and divorce in Muslim jurisprudence, in order to examine themes such as women's spiritual capacities, female leadership, sexuality, and slavery. Next, we will turn to the headscarf as a lens through which to explore modern configurations of gender and sexuality, as they intersect with conceptions of national belonging, religious identity, and individual freedom. Finally, we will study contemporary debates over polygyny, homosexuality, and female religious authority. There are no prerequisites for this course. No prior knowledge of Islam is expected. Offered as RLGN 227 and WGST 227. Counts for CAS Global & Cultural Diversity Requirement.

RLGN 228. Asian Americans: Histories, Cultures, Religions. 3 Units.

This course introduces students to Asian American Studies as an interdisciplinary academic discipline. It critically examines the global and transnational dimensions of U.S. history, the constructions of "modernity" in the U.S., and the shaping of U.S. culture and religion, race and racialization, identity constructions and contestations, law and law-making, colonialism and empire building, labor and migration, politics and public policy making, and social movements through a critical study of Asian Americans and their diverse histories, cultures, religions, identity negotiations and contestations, social movements, and political activism. Offered as ETHS 228, HSTY 228 and RLGN 228. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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 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 RLG 232 and ETHS 232. Counts for CAS Global & Cultural Diversity Requirement.

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, RLG 233, and JDST 233. Counts for CAS Global & Cultural Diversity Requirement.

RLGN 234. The Ramayana: The Great Indian Epic. 3 Units.

The Ramayana, a 2000 year old Indian epic, is an intricate story of battling kings and demons, family loyalty and betrayal, romance, religion, and politics. These stories create, store, and transmit cultural and religious values and icons for millions of people in India and other Asian and Southeast Asian nations. Our study will range from close readings of the Ramayana, to observing and reflecting on contemporary practices, to careful study of images and artifacts on display at the Cleveland Museum of Art. We will apply a variety of methods and tools to investigate class materials, from a number of different disciplines, including sociology, history, theology, anthropology, and psychology. Counts for CAS Global & Cultural Diversity Requirement.

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 RLG 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. Counts for CAS Global & Cultural Diversity Requirement.

RLGN 243. Bollywood and Social Justice: Contemporary Bollywood Movies with a Social Message. 3 Units.

India, where over-the-top, melodramatic films dominate, produces more than 1,000 films a year. With lavish action sequences punctuated by periodic songs in picturesque locales, these films, popularly referred to as Bollywood, traditionally have been known for depicting imaginary worlds, very far from reality. Among these are movies that are deeply immersed in issues of religion, religious conflict, caste, and social injustice. These issues range from ones concerning purity and the class system and Hindu-Muslim conflict, to women's rights and human trafficking. This class will be looking at a number of Bollywood films with focal points of matters pertaining to social justice. Students will learn about the foundations of these inequalities and intolerances so that they can more completely understand the themes addressed in the movies. Offered as ETHS 243 and RLG 243.

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 RLG 251. Counts for CAS Global & Cultural Diversity Requirement.

RLGN 252. Soul Murder: Religion and Sexual Abuse. 3 Units.

This seminar traces anthropological questions about religious-trauma, -memory, and -suffering through the lens of clergy sexual abuse. How is religious sexual abuse different than non-religious contexts? What can survivors teach us about the resilience of the human spirit? What are the racial dynamics of the recent Roman Catholic crisis? What flaws has it exposed in our criminal justice system? To answer questions like these, we will (i) begin the semester with anthropological studies of religion and trauma. Then we will (ii) examine grand jury investigations in the United States. Prepared by these theoretical and historical texts, we will (iii) evaluate case studies from the Roman Catholic context, including sexual abuse by nuns. We will use these examples to evaluate (iv) representations of the crisis in film and news media. Finally, we will (v) compare the Catholic crisis to recent sexual abuse scandals in American Jewish, Muslim, and Protestant communities. The comparative literature will include readings by Veena Das (cultural anthropology), Levinas (philosophy), Kathryn Lofton (religious studies), Timothy Lytton (law), Fortune (theology), and Frawley-O'Dea (psychology). Primary sources will include excerpts from special prosecutors and grand juries in Pennsylvania, Louisiana, and Massachusetts. Films will include "Doubt" and "Spotlight." By the end of the course, students will: - Know how to research and critique the legal, spiritual, and theoretical consequences of religious sexual abuse. - Be able to debate multiple theories of religion and trauma. - Be able to analyze data that is emotionally difficult and legally complex. Our seminars will include discussions, short writing assignments, collaborative work, and presentations. Offered as RLG 252 and WGST 252. Counts for CAS Global & Cultural Diversity Requirement.

RLGN 253. Religion and Philosophy in China. 3 Units.

This course critically examines the three principal religious and philosophical traditions of China: the Confucian, Daoist, and Chinese Buddhist traditions. Through a combination of assigned print and online readings, video clips and documentaries, class discussions, and written assignments, students explore the origins and historical developments, principal thinkers, central religious and doctrinal themes, ethics, spirituality, popular devotions, social movements, and contemporary developments of these three major religious and philosophical traditions of China. Students will consider the wider social, cultural, ethical, economic, and political dimensions of Chinese religions and philosophies generally, and themes of community and society, identity constructions, personal experiences, movements, as well as their socio-cultural reproductions in contemporary China, and where appropriate, the Chinese Diaspora in North America. Offered as CHIN 253C, ETHS 253C, PHIL 253 and RLGN 253.

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. Counts for CAS Global & Cultural Diversity Requirement.

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 re-visited 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. Counts for CAS Global & Cultural Diversity Requirement.

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 AFST 265, ETHS 265 and RLGN 265. Counts for CAS Global & Cultural Diversity Requirement.

RLGN 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.

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. Counts for CAS Global & Cultural Diversity Requirement. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, 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 and 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. Counts for CAS Global & Cultural Diversity Requirement.

RLGN 278. Religion and Popular Culture. 3 Units.

How does religion function when it shows up in popular culture? How does popular culture influence and help shape religion? This "topics" course explores the interactions between religion and popular culture in contemporary society. Each section will focus on visual, kinetic, aural, haptic or literary "texts" that may include musical production, dance, film and television, social media, sports, video, visual and textile arts, traditional fiction or graphic novels. The course examines how religious traditions, symbols or concepts are evoked in popular cultural texts and how these texts create meaning and help shape individual and communal identity. Each section will examine themes and issues that may include: gender, race, and sexuality; protest and activism, commercialism and consumerism; power and identity; ethics and morality; experience and embodiment; and constructions of evil, salvation, and transcendence. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

RLGN 284. Jesus Through Islamic Lens. 3 Units.

Christians are often surprised when they hear Muslims say, "We believe in Jesus too, and we hold him in great esteem." But what do they really mean? Are the Muslim Jesus and the Christian Jesus the same person? The primary aim of this course is to introduce an image of Jesus little known outside the 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. Hence, the Jesus presented in this course will be similar in some ways to the Jesus in the Christian Gospels, in others not. Why and how this Muslim tradition of Jesus arose will be also discussed in this course.

Jesus Through Islamic Lens 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 faith, not only as it contrasts with Christianity but also as it compares. In this course we will try to respond to these questions: What role does Jesus have in Islam? What does the Quran say about Him? What does it not say? Why are Muslims repulsed by the idea that Jesus is the Son of God, fully God and fully man? What do Muslims have in mind when they acknowledge Jesus as virgin-born? This course also requires reading literature that pertains to the history of Islam, its theology and its culture, and because of its emphasis on an area of the world historically distinct from the West (or European culture), the course will fulfill the Global and Cultural Diversity requirement. Counts for CAS Global & Cultural Diversity Requirement.

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. Offered as RLG 301 and RLG 403.

RLGN 302. The Lemonade Class: Religion, Race, Sex and Black Music. 3 Units.

Charles Long suggests that black musical forms are creative responses to the particular circumstances of black peoples' presence in the U.S and black notions of the sacred. In April of 2016, Beyoncé released her visual album *Lemonade* two days after the death of Prince. This course is organized around the album's title cuts and links these two artists together in an examination of religion and musical performance as creative response to the racial and gendered conditions of black life. The course investigates how both artists have used music as a platform to explore issues of race, gender, commerce, sexuality, power and divinity. The course also looks at examples from the works of earlier artists who address similar themes such as Ma Rainey, Bessie Smith, Muddy Waters, Billie Holiday, Nina Simone, Little Richard, James Brown, Marvin Gaye, and Aretha Franklin. Offered as AFST 302, ETHS 302, MUHI 316, RLG 302, RLG 402, and WGST 302. Counts for CAS Global & Cultural Diversity Requirement.

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 AFST 304, RLG 304, RLG 404, WGST 304, and ETHS 304. Counts for CAS Global & Cultural Diversity Requirement.

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 307. Body, Health and Medicine in Chinese Religions: Historical and Contemporary Perspectives. 3 Units.

This course critically evaluates the history and development of traditional Chinese approaches to health and medicine in the context of Chinese religious, philosophical, and socio-cultural history. It examines the constructions of the body in Chinese religious and philosophical thought across different historical periods and evaluates their significance and implications for understanding Chinese approaches to health and medicine. It discusses the conceptions of "health" and "good health" in ancient China, the distinction between "healing" and "curing," the development of the complementary yin-yang and five phases (wuxing) theories, understandings of nature (xing) and body (ti), the concept of qi as life force, and various microcosm-macrocosm analogies that emerged from Chinese religious and philosophical traditions. It explores how these religious and philosophical frameworks, beginning with the Daoist classic, *Basic Questions in the Inner Classic of the Yellow Emperor* (Huangdi Neijing Suwen) have evolved to undergird the development of diet, acupuncture, moxibustion, meditation, and various alchemical practices within Chinese holistic conceptions of health and practices of Traditional Chinese Medicine. Offered as RLG 307, RLG 407, CHIN 307, HSTY 308, and ETHS 307. Counts as SAGES Departmental Seminar. Counts for CAS Global & Cultural Diversity Requirement.

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 RLG 308. Counts for CAS Global & Cultural Diversity Requirement.

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, RLG 310 and RLG 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 representatives 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 AFST 311, ETHS 311, RLG 311, and RLG 411. Counts for CAS Global & Cultural Diversity Requirement. Prereq: RLG 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. Counts for CAS Global & Cultural Diversity Requirement.

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 RLG 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 critically 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 RLG 313 and RLG 413. Prereq: RLG 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 RLG 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 RLG 315. Counts for CAS Global & Cultural Diversity Requirement.

RLGN 316. Christianity in China. 3 Units.

This course critically evaluates Christianity's long history in China, beginning with the "Luminous Religion" (Jingjiao) that was propagated by Assyrian Christian missionaries in Tang China (7th century CE), the missionary endeavors of Catholic and Protestant foreign missionaries and mission societies, the rise of indigenous Chinese Christianities that sought independence from foreign missionaries, the impact of communist rule and the Cultural Revolution, and current developments involving both the official government-approved churches (i.e., the Three Self Patriotic Movement and the Chinese Patriotic Catholic Association) on the one hand, and the house church movement (jiating jiaohui) on the other hand. Students will critically discuss and analyze the historical dimensions of Christianity's presence in China and engagement with various social, cultural, political, philosophical, and religious aspects of Chinese society, past and present, and consider the implications of emergent forms of contemporary indigenous Chinese Christian movements for the future of Chinese Christianity. Offered as RLG 316, RLG 416, HSTY 322, CHIN 316 and ETHS 326. Counts for CAS Global & Cultural Diversity Requirement.

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 RLG 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 RLG 317 and RLG 417. Prereq: RLG 205.

RLGN 318. Christian Music: Historical and Global Perspectives. 3 Units.

Music has played an outsized role in the history and development of Christianity, from plainchant to polyphony, shape note singing to gospel, congregational hymns to contemporary genres and global musical expressions at Christian worship across different continents and cultures. Offered as an upper-division seminar for advanced undergraduate and graduate students, this seminar examines the history and development of Christian music around the world within the social, cultural, regional, ritual, and spiritual contexts that inspired their emergence and growth. While the primary approach in this seminar is historiographical, ethnomusicological principles may be utilized where appropriate to examine contemporary genres of Christian music from the Two-Thirds or Majority World. Offered as RLG 318, RLG 418, and MUHI 309. Counts as SAGES Departmental Seminar. Counts for CAS Global & Cultural Diversity Requirement.

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 RLG 319. Counts for CAS Global & Cultural Diversity Requirement.

RLGN 320. Gods and Demons in the Ancient Near East and Egypt. 3 Units.

The roots of many modern religious, literary, social, and political notions reach deep into the fertile soil of Ancient Near Eastern and Egyptian cultures, which developed as early as the fourth millennium BCE and flourished until the Hellenistic period. In this course we will examine various components of the religious, divinatory and magical systems of these cultures, and reflect upon their relationship with the stories that are found in the Hebrew Bible. We will learn (through a critical analysis of a selection of ancient texts) about ancient Mesopotamian and Egyptian deities, demons, myths, and magical rituals. We will also explore notions of creation, cosmic order, the human condition, death, afterlife, divine favor, and a wide variety of beliefs that, while often contradictory to modern ways of thinking, combined into unified religious systems. Offered as ANEE 320, RLG 320 and RLG 420.

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 RLG 324 and RLG 424.

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 RLG 326 Counts for CAS Global & Cultural Diversity Requirement.

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 RLG 433: PHIL 101 or RLG 102. Offered as PHIL 333, RLG 333, PHIL 433, and RLG 433. Prereq: PHIL 101 or RLG 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 feminist/womanist discourse, perspectives on institutional roles, religion and activism, and spirituality and the arts. Offered as ETHS 339, RLG 338 and WGST 339. Counts for CAS Global & Cultural Diversity Requirement.

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 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 RLG 345 and RLG 445. Prereq: RLG 201 or RLG 209 or Requisites Not Met permission.

RLGN 348. Buddhism and Cognitive Science. 3 Units.

In 1987, the Dalai Lama initiated a yearly event—Mind and Life Dialogues—to address "critical issues of modern life at the intersection of scientific and contemplative understanding". Dialogue topics included issues related to Buddhist thought and practice, and cognitive science. Others with an interest in the intersection of Buddhism and cognitive science, such as Robert Wright in *Why Buddhism is True: The Science and Philosophy of Meditation and Enlightenment* (2017), argue that non-supernatural aspects of Buddhism, such as the benefits of mindfulness meditation and the nature of the (non-)self, are affirmed by cognitive science and evolutionary psychology. The notion that at least some aspects of Buddhism are "true" in relation to contemporary cognitive scientific views of mind and brain has attracted considerable attention from both Buddhist practitioners and cognitive scientists. This seminar explores Buddhist and cognitive science perspectives on issues such as embodied cognition, consciousness, mind, self and personal identity, theory of mind, morality, representation, and language. We start with a general overview of Buddhist philosophy, and then turn to specific readings on Buddhist concepts in relation to similar concepts found in the cognitive science literature. For instance, we will explore the Buddhist concept of no permanent self or soul (*an-tman*). This idea resonates with Daniel Dennett's notion of the "narrative self" and the cognitive neuroscience view that there is no neurological center of self or experience. Although the specific concepts covered will vary in each iteration of this course, readings will always be drawn from both Buddhist primary and secondary readings, and from the cognitive science literature. Offered as COGS 348, COGS 448, RLGN 348 and RLGN 448. Counts for CAS Global & Cultural Diversity Requirement. Prereq: Completion of one COGS or RLGN course or Requisites Not Met permission.

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. Counts for CAS Global & Cultural Diversity Requirement.

RLGN 353. Hindu and Jain Bioethics: Special Focus on Women's and Gender Studies. 3 Units.

This course will provide both an introduction to basic Hinduism and Jainism and an introduction to Hindu and Jain bioethics. We will focus primarily on bioethical issues that pertain to women and that are gender related. These issues include abortion, menstruation, surrogacy, intersex, and other topics of controversy. Offered as ETHS 353, RLGN 353, RLGN 453, and WGST 355. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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 Units.

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 201.

RLGN 400. 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 402. The Lemonade Class: Religion, Race, Sex and Black Music. 3 Units.

Charles Long suggests that black musical forms are creative responses to the particular circumstances of black peoples' presence in the U.S and black notions of the sacred. In April of 2016, Beyoncé released her visual album *Lemonade* two days after the death of Prince. This course is organized around the album's title cuts and links these two artists together in an examination of religion and musical performance as creative response to the racial and gendered conditions of black life. The course investigates how both artists have used music as a platform to explore issues of race, gender, commerce, sexuality, power and divinity. The course also looks at examples from the works of earlier artists who address similar themes such as Ma Rainey, Bessie Smith, Muddy Waters, Billie Holiday, Nina Simone, Little Richard, James Brown, Marvin Gaye, and Aretha Franklin. Offered as AFST 302, ETHS 302, MUHI 316, RLGN 302, RLGN 402, and WGST 302. Counts for CAS Global & Cultural Diversity Requirement.

RLGN 403. 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. Offered as RLGN 301 and RLGN 403.

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 AFST 304, RLGN 304, RLGN 404, WGST 304, and ETHS 304. Counts for CAS Global & Cultural Diversity Requirement.

RLGN 407. Body, Health and Medicine in Chinese Religions: Historical and Contemporary Perspectives. 3 Units.

This course critically evaluates the history and development of traditional Chinese approaches to health and medicine in the context of Chinese religious, philosophical, and socio-cultural history. It examines the constructions of the body in Chinese religious and philosophical thought across different historical periods and evaluates their significance and implications for understanding Chinese approaches to health and medicine. It discusses the conceptions of "health" and "good health" in ancient China, the distinction between "healing" and "curing," the development of the complementary yin-yang and five phases (wuxing) theories, understandings of nature (xing) and body (ti), the concept of qi as life force, and various microcosm-macrocosm analogies that emerged from Chinese religious and philosophical traditions. It explores how these religious and philosophical frameworks, beginning with the Daoist classic, *Basic Questions in the Inner Classic of the Yellow Emperor* (Huangdi Neijing Suwen) have evolved to undergird the development of diet, acupuncture, moxibustion, meditation, and various alchemical practices within Chinese holistic conceptions of health and practices of Traditional Chinese Medicine. Offered as RLGN 307, RLGN 407, CHIN 307, HSTY 308, and ETHS 307. Counts as SAGES Departmental Seminar. Counts for CAS Global & Cultural Diversity Requirement.

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 and 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, Santería, 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 representatives 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 AFST 311, ETHS 311, RLGN 311, and RLGN 411. Counts for CAS Global & Cultural Diversity Requirement.

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 RLG 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 critically 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 RLG 313 and RLG 413.

RLGN 416. Christianity in China. 3 Units.

This course critically evaluates Christianity's long history in China, beginning with the "Luminous Religion" (Jingjiao) that was propagated by Assyrian Christian missionaries in Tang China (7th century CE), the missionary endeavors of Catholic and Protestant foreign missionaries and mission societies, the rise of indigenous Chinese Christianities that sought independence from foreign missionaries, the impact of communist rule and the Cultural Revolution, and current developments involving both the official government-approved churches (i.e., the Three Self Patriotic Movement and the Chinese Patriotic Catholic Association) on the one hand, and the house church movement (jiating jiaohui) on the other hand. Students will critically discuss and analyze the historical dimensions of Christianity's presence in China and engagement with various social, cultural, political, philosophical, and religious aspects of Chinese society, past and present, and consider the implications of emergent forms of contemporary indigenous Chinese Christian movements for the future of Chinese Christianity. Offered as RLG 316, RLG 416, HSTY 322, CHIN 316 and ETHS 326. Counts for CAS Global & Cultural Diversity Requirement.

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 RLG 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 RLG 317 and RLG 417.

RLGN 418. Christian Music: Historical and Global Perspectives. 3 Units.

Music has played an outsized role in the history and development of Christianity, from plainchant to polyphony, shape note singing to gospel, congregational hymns to contemporary genres and global musical expressions at Christian worship across different continents and cultures. Offered as an upper-division seminar for advanced undergraduate and graduate students, this seminar examines the history and development of Christian music around the world within the social, cultural, regional, ritual, and spiritual contexts that inspired their emergence and growth. While the primary approach in this seminar is historiographical, ethnomusicological principles may be utilized where appropriate to examine contemporary genres of Christian music from the Two-Thirds or Majority World. Offered as RLG 318, RLG 418, and MUHI 309. Counts as SAGES Departmental Seminar. Counts for CAS Global & Cultural Diversity Requirement.

RLGN 420. Gods and Demons in the Ancient Near East and Egypt. 3 Units.

The roots of many modern religious, literary, social, and political notions reach deep into the fertile soil of Ancient Near Eastern and Egyptian cultures, which developed as early as the fourth millennium BCE and flourished until the Hellenistic period. In this course we will examine various components of the religious, divinatory and magical systems of these cultures, and reflect upon their relationship with the stories that are found in the Hebrew Bible. We will learn (through a critical analysis of a selection of ancient texts) about ancient Mesopotamian and Egyptian deities, demons, myths, and magical rituals. We will also explore notions of creation, cosmic order, the human condition, death, afterlife, divine favor, and a wide variety of beliefs that, while often contradictory to modern ways of thinking, combined into unified religious systems. Offered as ANEE 320, RLG 320 and RLG 420.

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 RLG 324 and RLG 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 RLG 433: PHIL 101 or RLG 102. Offered as PHIL 333, RLG 333, PHIL 433, and RLG 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 RLG 345 and RLG 445.

RLGN 448. Buddhism and Cognitive Science. 3 Units.

In 1987, the Dalai Lama initiated a yearly event—Mind and Life Dialogues—to address "critical issues of modern life at the intersection of scientific and contemplative understanding". Dialogue topics included issues related to Buddhist thought and practice, and cognitive science. Others with an interest in the intersection of Buddhism and cognitive science, such as Robert Wright in *Why Buddhism is True: The Science and Philosophy of Meditation and Enlightenment* (2017), argue that non-supernatural aspects of Buddhism, such as the benefits of mindfulness meditation and the nature of the (non-)self, are affirmed by cognitive science and evolutionary psychology. The notion that at least some aspects of Buddhism are "true" in relation to contemporary cognitive scientific views of mind and brain has attracted considerable attention from both Buddhist practitioners and cognitive scientists. This seminar explores Buddhist and cognitive science perspectives on issues such as embodied cognition, consciousness, mind, self and personal identity, theory of mind, morality, representation, and language. We start with a general overview of Buddhist philosophy, and then turn to specific readings on Buddhist concepts in relation to similar concepts found in the cognitive science literature. For instance, we will explore the Buddhist concept of no permanent self or soul (an-tman). This idea resonates with Daniel Dennett's notion of the "narrative self" and the cognitive neuroscience view that there is no neurological center of self or experience. Although the specific concepts covered will vary in each iteration of this course, readings will always be drawn from both Buddhist primary and secondary readings, and from the cognitive science literature. Offered as COGS 348, COGS 448, RLG 348 and RLG 448. Counts for CAS Global & Cultural Diversity Requirement. Prereq: Completion of one COGS or RLG course or Requisites Not Met permission.

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, RLG 350, and RLG 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 RLG 352, RLG 452, COGS 352 and COGS 452. Counts for CAS Global & Cultural Diversity Requirement.

RLGN 453. Hindu and Jain Bioethics: Special Focus on Women's and Gender Studies. 3 Units.

This course will provide both an introduction to basic Hinduism and Jainism and an introduction to Hindu and Jain bioethics. We will focus primarily on bioethical issues that pertain to women and that are gender related. These issues include abortion, menstruation, surrogacy, intersex, and other topics of controversy. Offered as ETHS 353, RLGN 353, RLGN 453, and WGST 355. Counts for CAS Global & Cultural Diversity Requirement.

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 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 Units.

Project must be accepted by a member of the department faculty prior to registration. Prereq: Graduate standing.

RLGN 651. Thesis M.A.. 1 - 9 Units.

Project must be accepted by a member of the department faculty prior to registration.

Social Justice Institute

A15C Crawford Hall
www.case.edu/socialjustice (<http://www.case.edu/socialjustice/>)
 Phone: 216.368.7568
 Ayesha Bell Hardaway, Co-Director; Mark Chupp, Co-Director
socialjustice@case.edu

The Social Justice Institute strives to create a just world. We examine the root causes of social injustice and develop innovative solutions by supporting creative research, scholarship, and pedagogy; social justice leaders on and off campus; and relationships within the university and into the community. We work to eradicate all systems of oppression by redistributing and expanding resources and opportunities while exalting human dignity.

We believe in:

- action
- community involvement
- education
- empathetic relationships
- equity
- human dignity
- inclusiveness
- intergenerational collaboration

The Social Justice Institute believes that university communities should be educators and leaders in advancing an inclusive and just society that raises awareness of social injustice; enhances moral courage; promotes

critical thinking about power, privilege and equity; and encourages action and equitable solutions.

Undergraduate students from across the university have the opportunity to pursue a minor in Social Justice that prepares them to address local, national and global inequities. An interdisciplinary and flexible approach allows students majoring in the humanities or in STEM fields to address a wide range of crucial issues. The curriculum emphasizes the history, theory and practice of social justice work. It examines the distribution of power, resources and opportunities, and appropriate individual and collective remedies for social injustice.

Academic Program Faculty

Ayesha Bell Hardaway, JD

Assistant Professor, School of Law; Director, Social Justice Law Center, School of Law; Co-Director, Social Justice Institute

Mark Chupp, PhD, MSW

Assistant Professor, Jack, Joseph and Morton Mandel School of Applied Social Sciences (MSASS); Chair, Concentration in Community Practice for Social Change, MSASS; Founding Director, Community Innovation Network, MSASS; Co-Director, Social Justice Institute

Cristian Gómez Olivares, PhD

Associate Professor, Department of Modern Languages and Literatures

B. Jessie Hill, JD

Judge Ben C. Green Professor of Law; Associate Dean for Academic Affairs, School of Law

Marilyn Sanders Mobley, PhD

Professor, Department of English

Diana L. Morris, PhD, RN, FAAN, FGSA

Florence Cellar Associate Professor of Gerontological Nursing, Frances Payne Bolton School of Nursing; Executive Director, University Center on Aging and Health

Dana Prince, MPH, PhD

Assistant Professor, Jack, Joseph and Morton Mandel School of Applied Social Sciences

Ben Vinson III, PhD

Provost and Executive Vice President; Hiram C. Haydn Professor of History

Founder/Inaugural Director

Rhonda Y. Williams, PhD

The Social Justice minor is open to all undergraduate students. The minor requires a total of 15 credit hours, including the required core course (SJUS 100 Introduction to Social Justice, 3 credits). In addition to the required course, students must take one course from each Focus Area below, plus one additional elective from any Focus Area.

The courses listed below are accepted toward the minor. Approved electives are added every year; students may request that relevant SAGES seminars be applied for elective credit.

Focus Area 1: Ethics, Politics and Economics

Are existing arrangements just? To what extent are current thought systems amenable to change? What are the preferred alternatives and how can they be realized?

HSTY/ETHS 393	Advanced Readings in the History of Race	3
PHIL 316	African Political Thought	3
PHIL 325/425	Philosophy of Feminism	3
PHIL 334/ POSC 354/454	Political and Social Philosophy	3
PHIL 384	Ethics and Public Policy	3

Focus Area 2: Social Inequality, Power and Privilege

What is a fair distribution of resources? How do cultural practices, social relations, social structures and institutions reproduce, reduce or eliminate inequalities? What are the consequences of social inequality for the health, development and well-being of individuals and communities? How are distributions and uses of power connected to social inequalities?

ETHS/WGST/FRCH/ WLIT 335/435	Women in Developing Countries	3
HSTY 208	Social History of Crime	3
HSTY 257	Immigrants in America	3
HSTY 259	Introduction to Latina/o Studies	3
HSTY/WGST/ETHS 318	History of Black Women in the U.S.	3
HSTY 363/463	Gender and Sexuality in America	3
MPHP 101	Introduction to Public Health	3
ORBH 370	Navigating Gender in Organizations	3
RLGN 338/WGST 339	Black Women and Religion	3
SOCI 202	Race and Ethnic Minorities in The United States	3
SOCI/WGST 326	Gender, Inequality, and Globalization	3
SOCI 349	Social Inequality	3
SOCI 366	Racial Inequality and Mass Imprisonment in the US	3
SPAN 342	Latin American Feminist Voices	3
WGST/SOCI 201	Introduction to Gender Studies	3
		3

Focus Area 3: Social Movements and Social Change

What are competing models of social change? What role have social movements played in U.S. and global history? How do social movements form? How have states responded to social movements? What is the relationship between democracy and social movements? How have different technological innovations advanced or impeded social movements? What knowledge and skills are necessary to implement social change?

HSTY/ETHS 280	History of Modern Mexico	3
HSTY 381	City as Classroom	3
POSC 322	Political Movements and Political Participation	3
POSC 346/446	Women, Power, and Politics	3
SASS 369	Social Networking and Community Organizing in the 21st Century	3
SOCI 328	Urban Sociology	3

SOCI 380	Social Movements and Social Change	3
SPAN 315	Latin American Cultural Conflicts	3

Course

SJUS 100. Introduction to Social Justice. 3 Units.

Quests for justice and struggles against injustice have shaped human understanding, behavior and relationships for centuries. Individuals operate within community contexts created through interactions and relationships structured by sociability, belonging, and responsibility. Probing broad questions, this signature core course will encourage students to think critically and expansively about the social world and the conditions of humanity. The course will provide a foundational exploration of social justice concepts, issues, and remedies, thereby developing the necessary analytical tools and information to assess inequality and injustice and address historical and contemporary issues. Following an interdisciplinary, case-study approach, featuring faculty from different schools and departments at CWRU, this course also will provide students with multiple frameworks for understanding the interconnections between what are often perceived as disparate and disconnected fields of study and inquiry. Three primary questions guide the course: What is social justice? Why does social justice matter? What can be done? Counts for CAS Global & Cultural Diversity Requirement.

Department of Sociology

226 Mather Memorial Building
<https://sociology.case.edu/>
 Phone: 216.368.2700; Fax: 216.368.2676
 Dale Dannefer, Department Chair
dale.dannefer@case.edu

The Department of Sociology offers programs leading to the Bachelor of Arts, Master of Arts, and Doctor of Philosophy degrees.

Sociologists investigate the causes and consequences of *social processes* and *social change* in a diverse and increasingly complex world. Sociology covers a broad range of topics, from the *micro level* to the *macro level* of society. Our undergraduate program offers concentrations in *Crime, Law and Justice*; *Gender, Work and Family*; *Health, Medicine and Aging*; and *Social Inequality*. Sociology's graduate program includes specializations in *Sociology of Health and Medicine*, *Sociology of Age and the Life Course*, *Social Inequalities*, and *Research Methods*.

Many sociology majors participate in field-based learning experiences in course work and also through their involvement in faculty research projects. We encourage interaction between students and faculty by offering many opportunities for individualized study and research. Our department has a long history of innovation and international leadership in research, combined with a friendly, student-centered culture, for both graduate and undergraduate students.

Especially with globalization and the increasing diversity of our society, many employers look favorably on the breadth of knowledge and perspective provided by majoring in sociology. For the same reasons, graduate programs in many fields, including medicine and law, also consider a background in sociology to be a strength. Graduates of our program are working in positions in research institutions, medicine, private industry, and the public sector.

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

Cassi Pittman Claytor, PhD

(Harvard University)

Climo Junior Professor

Race and ethnic relations; social stratification and inequality; sociology of consumption; economic sociology; qualitative methods

Gary T. Deimling, PhD

(Bowling Green State University)

Professor

Medical sociology; sociology of aging; family sociology

Mary Patrice Erdmans, PhD

(Northwestern University)

Professor

Social inequality; race and ethnicity; immigration; qualitative research methods; gender

Brian Gran, PhD, JD

(Northwestern University; Indiana University-Bloomington)

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, PhD

(Purdue University)

Professor

Health disparities; sociology of disability; sociology of the life course; race/ethnicity; quantitative methods

Lecturers

Karie Feldman, PhD

(Case Western Reserve University)

Lecturer

Family policy, medical sociology, sex and gender

Heather Hurwitz, PhD

(University of California Santa Barbara)

Lecturer

Social movements, gender and intersectionality, social media/internet studies, global studies, leadership

Secondary Faculty

David E. Biegel, PhD

(University of Maryland, Baltimore)

Henry Zucker Professor, Jack, Joseph and Morton Mandel School of Applied Social Sciences

Family; social networks; caregiving; mental health

Kurt Stange, MD, PhD

(University of North Carolina)

Professor, Department of Epidemiology and Biostatistics, School of Medicine

Epidemiology; preventive health care; biostatistics; disability prevention in the elderly

Adam T. Perzynski, PhD

(Case Western Reserve University)

Associate Professor, School of Medicine

Sociology of health and illness; qualitative and quantitative methods; health disparities; health informatics

Aloen Townsend, PhD

(University of Michigan)

Professor, Jack, Joseph and Morton Mandel School of Applied Social Sciences

Adult development and aging; research methods and statistics; mental health; families and formal service systems

Adjunct Faculty

Gunhild Hagestad, PhD

(University of Minnesota)

Professor Emeritus of Sociology, Agder University College; Senior Researcher, NOVA (Norwegian Social Research)

Life course; gender; social policy

Edward H. Thompson, Jr., PhD

(Case Western Reserve University)

Professor Emeritus, College of the Holy Cross

Aging and masculinities; families and later life; men's health; religion and health

Undergraduate Programs

In addition to the sociology major, the undergraduate program also offers a sociology minor option and an IGS (Integrated Graduate Studies) Program that enables students to complete BA and MA degrees simultaneously (typically requiring a fifth year). Sociology offers a general curriculum, and students may also elect to specialize in one of four concentrations described in detail below.

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:

SOCI 101	Introduction to Sociology	3
SOCI 300	Modern Sociological Thought	3
SOCI 306	Logic of Social Inquiry	3
SOCI 307	Social Statistics	3

As an alternate to SOCI 307, students may also take:

ANTH 319	Introduction to Statistical Analysis in the Social Sciences
----------	---

or

PSCL 282	Quantitative Methods in Psychology
----------	------------------------------------

or

STAT 201	Basic Statistics for Social and Life Sciences
----------	---

An additional 18 hours of electives, consisting of any six courses in sociology 18

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

SOCI 204	Criminology	3
SOCI 239	International Comparative Family Policy	3
SOCI 250	Law & Society: Law, Rights and Policy	3
SOCI 320	Delinquency and Juvenile Justice	3
SOCI 349	Social Inequality	3
SOCI 357	Sociology of Human Rights	3
SOCI 360	The Sociology of Law	3
SOCI 366	Racial Inequality and Mass Imprisonment in the US	3
SOCI 374	Using Law to Designate Public-Private Boundaries for Social Policies	3
SOCI 380	Social Movements and Social Change	3

Gender, Work, and Family Concentration

SOCI 201	Introduction to Gender Studies	3
SOCI 208	Dating, Marriage, and Family	3
SOCI 228	Sociology of Sexuality	3
SOCI 250	Law & Society: Law, Rights and Policy	3
SOCI 239	International Comparative Family Policy	3
SOCI 264	Body, Culture and Disability	3
SOCI 275	Lives in Medicine: Becoming and Being a Physician	3
SOCI 310	The Individual in Society	3
SOCI 326	Gender, Inequality, and Globalization	3
SOCI 356	Economic Sociology: Money, Markets, Morals, and Social Life	3

SOCI 370	Sociology of the Family	3
SOCI 372	Work and Family: U.S. and Abroad	3

Health, Medicine and Aging Concentration

SOCI 203	Human Development: Medical and Social	3
SOCI 264	Body, Culture and Disability	3
SOCI 275	Lives in Medicine: Becoming and Being a Physician	3
SOCI 310	The Individual in Society	3
SOCI 311	Health, Illness, and Social Behavior	3
SOCI 313	Sociology of Stress and Coping	3
SOCI 319	Sociology of Institutional Care	3
SOCI 344	Health Disparities	3
SOCI 345	Sociology of Mental Illness	3
SOCI 361	The Life Course	3
SOCI 365	Health Care Delivery	3
SOCI 369	Aging in American Society	3
SOCI 377	Population Dynamics and Changing Societies	3
SOCI 443	Medical Sociology	3
SOCI 469	Aging in American Society	3

Social Inequality Concentration

SOCI 113	Critical Problems in Modern Society	3
SOCI 201	Introduction to Gender Studies	3
SOCI 202	Race and Ethnic Minorities in The United States	3
SOCI 203	Human Development: Medical and Social	3
SOCI 228	Sociology of Sexuality	3
SOCI 264	Body, Culture and Disability	3
SOCI 320	Delinquency and Juvenile Justice	3
SOCI 326	Gender, Inequality, and Globalization	3
SOCI 328	Urban Sociology	3
SOCI 344	Health Disparities	3
SOCI 349	Social Inequality	3
SOCI 356	Economic Sociology: Money, Markets, Morals, and Social Life	3
SOCI 357	Sociology of Human Rights	3
SOCI 465	Health Care Delivery	3
SOCI 366	Racial Inequality and Mass Imprisonment in the US	3
SOCI 372	Work and Family: U.S. and Abroad	3
SOCI 374	Using Law to Designate Public-Private Boundaries for Social Policies	3
SOCI 380	Social Movements and Social Change	3

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 four sociology courses.

Integrated Graduate Studies

The Department of Sociology participates in the Integrated Graduate Studies Program (<http://bulletin.case.edu/undergraduatestudies/gradprofessional/#acceleratiiontowardgraduatedegree>). 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:

SOCI 101	Introduction to Sociology	3
SOCI 300	Modern Sociological Thought	3
Three additional electives, at least two of which must be 300-level courses		9
Total Units		15

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 30 credit hours of course work.

SOCI 400	Development of Sociological Theory	3
SOCI 401	Contemporary Sociological Theory	3
SOCI 406	Logic of Social Inquiry	3
SOCI 407	Social Statistics	3
SOCI 443	Medical Sociology	3
SOCI 449	Social Inequality	3
SOCI 469	Aging in American Society	3
Three general electives in sociology		9
Total Units		30

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 66 credit hours beyond the Bachelor of Arts degree, including 18 credits of SOCI 701 Dissertation Ph.D. (dissertation hours).

SOCI 400	Development of Sociological Theory	3
SOCI 401	Contemporary Sociological Theory	3
SOCI 406	Logic of Social Inquiry	3
SOCI 407	Social Statistics	3
SOCI 443	Medical Sociology	3
SOCI 449	Social Inequality	3
SOCI 469	Aging in American Society	3
SOCI 509	Advanced Statistical Analysis	3
SOCI 514	Qualitative Methods/Field Research	3
Four electives (2 each) in Age and the Life Course, Medical Sociology, Social Inequality, or Research Methods		12
3 general electives in sociology		9
18 credit hours of dissertation		18
Total Units		66

2. In addition, the student must pass written comprehensive examinations in two of the four areas (Sociology of Age and the Life Course, Medical Sociology, Social Inequality, Research Methods) and successfully defend the dissertation.

Research Programs

Cancer Survivors Research Program (Gary Deimling)

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 health disparities and psycho-social factors related to race and gender. Formally started in September 1998, the program of research has benefited 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 CWRU 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.

Citizen Reentry Study (Tim Black)

This three-year research project identifies men, mostly fathers, who are locked up in an alternative incarceration facility in Cleveland, Ohio, for no more than six months. We observe programs in the facility and run a study circles group, and then track men for six months after their release into the community. The study focuses on the ways that men are prepared for reentry, identifies the systemic barriers to reentry, examines how men negotiate the conditions and processes of reentry, and describes varying outcomes.

Comparative-Historical Analysis of Children's Rights (Brian Gran)

The Children's Rights Index (CRI) 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 2014. 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 examines 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: Health Disparities and Trajectories of Inequality Across the Life Course (Dale Dannefer/Jessica Kelley)

Across societies, inequalities among age peers in health, well-being, and resources exist throughout the life course, and tend to increase with age in each succeeding cohort of individuals. How does such *intra-cohort 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. Jessica Kelley examines health disparities, and especially the influence of social and economic circumstances over the life course on later-life health, with a focus on differences organized by race/ethnicity and disability. Dale Dannefer is interested in identifying basic sociological processes that contribute to CDA and understanding their interrelation at macro-, meso-, and micro-levels of analysis.

The Elderly Care Research Center (Eva Kahana)

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 late life. Research projects have been funded by the National Institute on 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 ECRC 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.

The Forest Hill Neighborhood Study (Cassi Pittman Claytor)

The Forest Hill Neighborhood Study aims to unpack the causes of racial residential preferences by examining what compels members of the middle class to live in a majority-black neighborhood. Research consistently demonstrates that non-blacks consider predominantly black neighborhoods to be the *least* desirable of all possible neighborhoods. This project focuses on the residents of the Forest Hill neighborhood of East Cleveland, with the goal of identifying the characteristics and features of majority-black neighborhoods that middle-class blacks and non-blacks find desirable. The study investigates how cultural and racial dispositions factor into participants' selection of a neighborhood. The study also compares the experiences of white residents to those of

black residents and examines the history of the neighborhood, which, for most of its existence, excluded black homeowners.

Learning from Those Who Know: Action Research and Reform Efforts in Long-Term Care (Dale Dannefer)

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.

The Solidarity Refugee Oral History Project (Mary Erdmans)

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.

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, RLG 270, SOCI 201, and WGST 201. Counts for CAS Global & Cultural Diversity Requirement. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, 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. This course 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. This course will take 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. Offered as AFST 202 and SOCI 202. Counts for CAS Global & Cultural Diversity Requirement.

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 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 239. International Comparative Family Policy. 3 Units.

This course focuses on the connections between public policies and families and the values that enter into policy debates and family choices. It provides conceptual frameworks that can be used to identify and understand some of the influences underlying policy choices affecting families and also frameworks for evaluating the consequences of these choices for families of diverse structures, socio-economic statuses, and racial and ethnic backgrounds. We will apply this framework to topics such as maternity leave, child care, income assistance, and marriage promotion. We will compare U.S. policies to those of other industrialized countries, especially those in Italy. You will end the semester by conducting research on a social policy topic that we have not covered during the semester from understanding the initial social problem all the way through to making a policy recommendation to help you learn to explore a new topic independently. Central to the course are the intersections between families and governments via policy outputs, and the roles that citizens and family professionals can play in improving them. Using UNICEF resources, located in Florence, Italy, we will delve into evidence-based approaches for ameliorating suffering in young families across the globe. Using Florence as a classroom, we will explore differences in family life between the U.S. and Italy as a means to understand the ways in which the state must respond to differing cultures and needs. At the Innocenti Museum, in the same building as UNICEF's research offices, we will see an orphanage that began operations in 1445 and functioned as an orphanage and hospital until 1875, making it the oldest public institution in Italy. The building has been dedicated to the protection of children's rights and education since that time, and provides a backdrop for an early understanding of ways to think about family policy. Offered as SOCI 239 and WGST 239. Counts for CAS Global & Cultural Diversity Requirement.

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 Units.

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 306. Logic of Social Inquiry. 3 Units.

This course provides an introduction to the epistemologies and research methodologies used in sociological inquiry. We concentrate on the fundamental principles of research design and on developing a basic understanding of the research process. Topics include formulating a question, alternative modes of research design and principles of measurement, sampling and analysis. We draw examples from published work, ongoing studies, and publicly available data. Offered as SOCI 306 and SOCI 406. Prereq: SOCI 101 and sophomore standing.

SOCI 307. Social Statistics. 3 Units.

This course provides an introduction to social statistics, including univariate statistics and bivariate tests of association (chi-square, ttest, ANOVA, correlation, regression). Topics include: levels of measurement, probability theory and inference; hypothesis testing; and statistical power. Students receive hands-on instruction using statistical software. A student may receive credit for only one of the following: SOCI 307, ANTH 319, PSCL 282, or STAT 201. Offered as SOCI 307 and SOCI 407. Counts for CAS Quantitative Reasoning Requirement. 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 and Sophomore standing.

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. Counts for CAS Global & Cultural Diversity Requirement. Prereq: SOCI 101 or permission of program director.

SOCI 327. Narrative Methods: Life Stories, Oral History, and Sociological Storytelling. 3 Units.

This course discusses theoretical foundations and methodologies of narrative research, including life stories, oral history, and auto ethnography. The course is designed for students to complete a research project in the semester using narrative methods to collect and analyze primary data and write up the results. Offered as SOCI 327 and SOCI 427. Prereq: SOCI 101 and SOCI 303.

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 AFST 328, SOCI 328 and SOCI 428. Counts for CAS Global & Cultural Diversity Requirement. 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 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 course is an elective. Recommended preparation: PSCL 101. Offered as EDUC 338, PSCL 338 and SOCI 338.

SOCI 344. Health Disparities. 3 Units.

We have come to understand that stark disparities in health result from the social organization of society, especially inequality in resources and opportunities between and within social groups in the population. This seminar course examines the differential distribution of health and illness in society, focusing on the social determinants of health. Topics include: socioeconomic inequality; geographic context; social cohesion and exclusion; health burden in minority populations; policy and federal priorities. We utilize a life course perspective to understand how inequality "gets under the skin" to produce adverse health. Offered as SOCI 344 and SOCI 444. Counts for CAS Global & Cultural Diversity Requirement. Prereq: SOCI 101 and Sophomore standing.

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 355 and SOCI 455.

SOCI 356. Economic Sociology: Money, Markets, Morals, and Social Life. 3 Units.

The course introduces students to a sociological perspective on the economy, and the social processes that effect and are embedded in economic behavior, economic institutions and markets. Students will examine issues such as the social significance of money, the effect of social networks on labor market outcomes, the success and failure of firms, tips and gifts, informal markets and the trade of illicit goods, as well as topics such as immigration and globalization. Our investigations into these diverse topics reveal how economic phenomena, economic systems and processes are shaped by social networks, cultural understandings and relations of power. Throughout the course students will examine how economic relations are facilitated—created, maintained, transformed, and constrained—by social relations, revealing that economic life and behavior is just as social as religion, family or education. Prereq: SOCI 101.

SOCI 357. Sociology of Human Rights. 3 Units.

This course is designed to introduce students to the sociology of human rights. The starting point is fundamental ideas of rights, including citizenship and human rights. We then study various aspects of human rights treaty processes. Over the remainder of the term, we examine different human rights issues, both long-standing and contemporary. Throughout the term, we will critically approach human rights systems and scholarship. Offered as SOCI 357 and SOCI 457. Prereq: SOCI 101.

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. Prereq: 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 365 and SOCI 465. 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. Offered as AFST 366 and SOCI 366. 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 Units.

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. Counts for CAS Global & Cultural Diversity Requirement.

SOCI 385. Ethnography. 3 Units.

The course will be taught twice weekly as a seminar for upper level undergraduate students and graduate students, and will examine some of the key debates in ethnography, read ethnographies published as both books and articles, and explore various ways of designing ethnographic fieldwork. Offered as SOCI 385 and SOCI 485. Prereq: SOCI 101 and Sophomore standing.

SOCI 386. Race and Racism. 3 Units.

Race and Racism will discuss the classical and contemporary understandings of the concepts of race and racism. We will begin by taking an historical approach, delving into processes of racialization and the first instances where distinctions in human race were noted. We will survey theories of race and use a social constructions approach to examine how sociologists approach the study of racial and ethnic group difference. We will examine how definitions of racial groups have evolved over time and differ across contexts, as well as some of the underlying social and structural processes that create racial hierarchies. At the end of the course students should have a strong understanding of the mechanisms that reproduce systems of racial classification. The course will also examine patterns and trends in racial and ethnic inequality over recent decades, centering our discussion on the legacies of racism, current discrimination, and new processes that are currently unfolding to reproduce inequality. While the course's main focus is to examine understandings of race and racism in the United States, we will devote some attention to how race and ethnicity emerge in different environments by examining race and racism in an international context. Offered as AFST 386, SOCI 386 and SOCI 486. Counts for CAS Global & Cultural Diversity Requirement. Prereq: SOCI 101.

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.

This course provides an introduction to the epistemologies and research methodologies used in sociological inquiry. We concentrate on the fundamental principles of research design and on developing a basic understanding of the research process. Topics include formulating a question, alternative modes of research design and principles of measurement, sampling and analysis. We draw examples from published work, ongoing studies, and publicly available data. Offered as SOCI 306 and SOCI 406.

SOCI 407. Social Statistics. 3 Units.

This course provides an introduction to social statistics, including univariate statistics and bivariate tests of association (chi-square, ttest, ANOVA, correlation, regression). Topics include: levels of measurement, probability theory and inference; hypothesis testing; and statistical power. Students receive hands-on instruction using statistical software. A student may receive credit for only one of the following: SOCI 307, ANTH 319, PSCL 282, or STAT 201. Offered as SOCI 307 and SOCI 407. Counts for CAS Quantitative Reasoning Requirement. 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 427. Narrative Methods: Life Stories, Oral History, and Sociological Storytelling. 3 Units.

This course discusses theoretical foundations and methodologies of narrative research, including life stories, oral history, and auto ethnography. The course is designed for students to complete a research project in the semester using narrative methods to collect and analyze primary data and write up the results. Offered as SOCI 327 and SOCI 427.

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 AFST 328, SOCI 328 and SOCI 428. Counts for CAS Global & Cultural Diversity Requirement.

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 444. Health Disparities. 3 Units.

We have come to understand that stark disparities in health result from the social organization of society, especially inequality in resources and opportunities between and within social groups in the population. This seminar course examines the differential distribution of health and illness in society, focusing on the social determinants of health. Topics include: socioeconomic inequality; geographic context; social cohesion and exclusion; health burden in minority populations; policy and federal priorities. We utilize a life course perspective to understand how inequality "gets under the skin" to produce adverse health. Offered as SOCI 344 and SOCI 444. Counts for CAS Global & Cultural Diversity Requirement.

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 355 and SOCI 455.

SOCI 457. Sociology of Human Rights. 3 Units.

This course is designed to introduce students to the sociology of human rights. The starting point is fundamental ideas of rights, including citizenship and human rights. We then study various aspects of human rights treaty processes. Over the remainder of the term, we examine different human rights issues, both long-standing and contemporary. Throughout the term, we will critically approach human rights systems and scholarship. Offered as SOCI 357 and SOCI 457.

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 365 and SOCI 465.

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 MPHP 466, PQHS 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. Counts for CAS Global & Cultural Diversity Requirement.

SOCI 485. Ethnography. 3 Units.

The course will be taught twice weekly as a seminar for upper level undergraduate students and graduate students, and will examine some of the key debates in ethnography, read ethnographies published as both books and articles, and explore various ways of designing ethnographic fieldwork. Offered as SOCI 385 and SOCI 485.

SOCI 486. Race and Racism. 3 Units.

Race and Racism will discuss the classical and contemporary understandings of the concepts of race and racism. We will begin by taking an historical approach, delving into processes of racialization and the first instances where distinctions in human race were noted. We will survey theories of race and use a social constructions approach to examine how sociologists approach the study of racial and ethnic group difference. We will examine how definitions of racial groups have evolved over time and differ across contexts, as well as some of the underlying social and structural processes that create racial hierarchies. At the end of the course students should have a strong understanding of the mechanisms that reproduce systems of racial classification. The course will also examine patterns and trends in racial and ethnic inequality over recent decades, centering our discussion on the legacies of racism, current discrimination, and new processes that are currently unfolding to reproduce inequality. While the course's main focus is to examine understandings of race and racism in the United States, we will devote some attention to how race and ethnicity emerge in different environments by examining race and racism in an international context. Offered as AFST 386, SOCI 386 and SOCI 486. Counts for CAS Global & Cultural Diversity Requirement.

SOCI 509. Advanced Statistical Analysis. 3 Units.

The purpose of this course is to teach students multivariate data analysis, including linear regression, logistic regression, and econometric models. Students will learn about issues in data management such as variable measurement and techniques for handling missing data. Students also learn to select appropriate statistical models, design the analysis, and assess model fit. The course includes hands-on instruction with computer labs. Prereq: SOCI 407 and SOCI 406 or requisites not met permission.

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 Units.

Individual study and/or project work.

SOCI 701. Dissertation Ph.D.. 1 - 9 Units.

(Credit as arranged.) Prereq: Predoctoral research consent or advanced to Ph.D. candidacy milestone.

Teacher Licensure Program

Cleveland Hearing & Speech 421
www.case.edu/artsci/teachlic (<http://www.case.edu/artsci/teachlic/>)
 Phone: 216.368.0792; Fax: 216.368.5227
 Denise Davis, Director of Teacher Licensure
denise.k.davis@case.edu

Case Western Reserve University offers several programs leading to an Ohio teaching license. Teacher Education 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 (for Art Education) or the Cleveland Institute of Music (for Music Education).

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 or physics major); and 2) Multi-Age (grades preK-12) in French, Spanish, or Latin.

Teacher education programs at Case Western Reserve University lead to teaching licenses and are approved by the Ohio Department of Education and the Ohio Department of Higher Education.

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.

Program Faculty

Denise K. Davis, EdD
 (Teachers College, Columbia University)
Director, Teacher Education; Director, Adolescent to Young Adult Program

David Bellini, MA
 (Cleveland State University)
Adjunct Faculty, Teacher Education
 Educational Psychology

Nancy Benincasa, MS
 (Cleveland State University)
Adjunct Faculty, Teacher Education

Steven Ciampaglia, EdD
 (Northern Illinois University)
Associate Professor
 Director Art Education/Art Studio

Amy Davis, MA
(John Carroll University)
Adjunct Faculty, Teacher Education

Matthew Garrett, PhD
(Florida State University)
Associate Professor, Department of Music
Director UCITE; Coordinator, Undergraduate Studies in Music Education

Benjamin Helton, PhD
(University of Illinois)
Assistant Professor, Department of Music
Director, Spartan Marching Band

Susan Herron, MA
(John Carroll University)
Adjunct Faculty, Teacher Education
Literacy

Kathleen Horvath, PhD
(The Ohio State University)
Professor, Department of Music
Director, CWRU Orchestras

David King, MFA
(Kent State University)
Lecturer, Department of Art History and Art; Supervising Teacher High Schools
Art Education

Lisa L. Koops, PhD
(Michigan State University)
Professor, Department of Music
Head of Music Education

Nathan Kruse, PhD
(Michigan State University)
Associate Professor, Department of Music

Joseph Marencik, EdD
(Northcentral University)
Adjunct Faculty, Teacher Education
Curriculum and Special Methods, Technology

Ryan Scherber, PhD
(Florida State University)
Assistant Professor, Department of Music
Director of Bands

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 Department of Education and the Ohio Department of Higher Education) and choose teacher education as a second major. This second major requires 36 credit hours in professional education.

Adolescent 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 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. 61), Chemistry (p. 92), English (p. 154), History (p.), Mathematics (p. 214), Physics (p. 306), Classics (p. 103) or Modern Languages and Literatures (p. 234).

The education course requirements for the Adolescent to Young Adult or Multi-Age language programs are as follows:

EDUC 255	Literacy Across the Content Areas	3
EDUC 301	Introduction to Education	3
EDUC 304	Educational Psychology	3
EDUC 325	Content Area Special Methods I	3
EDUC 326	Content Area Special Methods II	3
EDUC 336	The Diverse Learner: Best Practice for Effective Classrooms	3
EDUC 340	Advanced Curriculum and Methods	3
EDUC 386	Introduction to Instructional Technology	3
EDUC 390	Student Teaching & Professional Development Seminar	3
EDUC 394	Student Teaching Practicum	9
Total Units		36

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 in the Overview, 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. 24) description in this bulletin; for Music Education, see the Department of Music (p. 259) description.

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.

Application of psychological principles as they relate to various educational learning theories. Principles and practices of measurement and evaluation. Learning developmental differences between child, adolescent, and young adult growth. Continuation of professional development. Application of research to instructional methodologies. Clinical/Field experiences required. Research project required for graduate students. Recommended preparation: PSCL 101. Offered as EDUC 304 and EDUC 404.

EDUC 325. Content Area Special Methods I. 3 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. 3 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 336. The Diverse Learner: Best Practice for Effective Classrooms. 3 Units.

Building on the theories of human development and learning encompassed in EDUC 304, this course guides students to develop a deeper understanding of theories and research in human development, of issues related to adolescents, and how they are applied in today's classrooms. Mental health issues, exceptions in learning and inclusion theory will be focal points for the course. Prereq: EDUC 304.

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 course is an elective. Recommended preparation: PSCL 101. 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. Counts as SAGES Departmental Seminar. 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 390C. Student Teaching Capstone & Professional Development Seminar. 3 Units.

This course is taken in conjunction with student teaching and emphasizes the integration of theory and practice. The course provides a forum for processing what students experience throughout the semester as students engage in full-time work in the classroom. The course also includes components that fulfill the SAGES Senior Capstone requirement. The course guides the professional development of each student as he or she compiles the portfolio, completes the Capstone, and prepares for state licensure exams. Counts as SAGES Senior Capstone. Prereq: EDUC 255, EDUC 386, EDUC 340. Coreq: EDUC 394.

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 Units.

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.

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.

Application of psychological principles as they relate to various educational learning theories. Principles and practices of measurement and evaluation. Learning developmental differences between child, adolescent, and young adult growth. Continuation of professional development. Application of research to instructional methodologies. Clinical/Field experiences required. Research project required for graduate students. Recommended preparation: PSCL 101. Offered as EDUC 304 and EDUC 404.

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 Units.

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.

EDJC (EDJC)

EDJC 395. Independent Study in Education. 1 - 3 Units.

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.

Department of Theater

Eldred Hall

<https://theater.case.edu/>

Phone: 216.368.4868; Fax: 216.368.5184

Jerrold Scott, Department Chair

jerrold.scott@case.edu

The Department of Theater at Case Western Reserve University offers education and participation in all aspects of drama, with course offerings in acting, costume design, scene design, directing, dramatic writing, history, literature, criticism, and stagecraft.

Bachelor of Arts students have the opportunity to perform and to serve on the design and technical teams in four fully produced mainstage theatrical productions each year, presented in the historic Eldred Theater. The low student-to-faculty ratio ensures that students are able to work closely with our faculty of highly accomplished artists and scholars. Recognizing that the theater is an inherently interdisciplinary study belonging to the humanities as well as the performing arts, the department treats all productions as artistic and educational experiences, and welcomes the participation of students regardless of their academic majors and career goals.

At the graduate level, the Master of Arts degree prepares students for work in professional theater or education, or for pursuit of further graduate study, while the Master of Fine Arts professional actor training program—a collaboration between the Department of Theater 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.

Department Faculty

Jerrold Scott, MFA

(University of South Carolina/Shakespeare Theatre Company)

Katharine Bakeless Nason Professor of Theater and Drama; Chair and Artistic Director

Directing; acting; speech and dialects

Christopher Bohan, MFA

(Wayne State University)

Instructor

Acting; improvisation

Donald Carrier, BCom

(McGill University/Webber Douglas Academy)

Instructor; Director, CWRU/CPH MFA Acting Program

Acting; script analysis; professional development

Jill Davis, MFA

(Temple University)

Associate Professor

Scene design; lighting design

Angelina M. Herin, MFA

(University of South Carolina)

Associate Professor

Costume design; stage makeup

Kevin Inouye, MFA

(Virginia Commonwealth University)

Assistant Professor

Movement; stage combat; acting

Shanna Beth McGee, MFA

(University of Georgia)

Professor

Voice; acting

Jeffrey Ullom, PhD

(University of Illinois, Champaign-Urbana)

Associate Professor; Director of Undergraduate Theater Studies

Theater history; dramatic literature

David Vegh, MFA

(California State University-Long Beach)

Associate Professor

Acting; audition laboratory; film acting

Lecturers

Anaya Farrell, BA

(McGill University)

Lecturer

Acting

Maryann Morris, BA
(Hiram College)
Lecturer
Stage management

Michael Suglio, MBA
(Case Western Reserve University)
Lecturer
Video Production

Greg Vovos, MFA
(University of Nevada-Las Vegas)
Lecturer
Playwriting; screenwriting

Adjunct Faculty

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

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:

Performance courses: Students must take all four of the following: 12

THTR 100	Introduction to Acting
THTR 103	Acting: Scene Study
THTR 110	Introduction to Theater
THTR 330	Play Directing I

Design courses 6

All students must take the following course as a prerequisite, preferably in the spring of their first year.

THTR 111	Introduction to Design
Students must take one of the following:	
THTR 223	Scenic Design
THTR 224	Lighting Design
THTR 225	Costume Design

Theater history courses: Students must take all four of the following: 12

THTR 325	Development of Theater: Beginnings to English Renaissance
THTR 326	Development of Theater: Renaissance to Romanticism
THTR 327	American Drama

THTR 329	Modern and Contemporary Drama	
Tech credit hours (minimum of 3 hours)		7
THTR 185	Theater Practicum (Students are required to enroll in THTR 185, a 1-hour practicum credit, accumulating 7 credits during their 8 semesters at CWRU. Students will enroll in THTR 185 each semester unless instructed to do otherwise by the director of undergraduate theater studies. Any exemptions to this requirement—receiving 2 credit hours in 1 semester or not enrolling in THTR 185 for a semester—must receive approval from the director of undergraduate theater studies.)	
Senior capstone: Students must take one of the following:		3
THTR 331	Play Directing II	
THTR 390	Advanced Topics in Design/Technology	
THTR 393	Senior Capstone: Dramaturgy	

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.

THTR 100	Introduction to Acting	3
THTR 103	Acting: Scene Study	3
THTR 105	Introduction to Stagecraft	3
THTR 201	Movement	3
THTR 206	Mr. Kiss Kiss Bang Bang - James Bond and Popular Culture	3
THTR 223	Scenic Design	3
THTR 224	Lighting Design	3
THTR 225	Costume Design	3
THTR 226	Stage Makeup	3
THTR 227	Stage Management	3
THTR 231	Acting: Advanced Scene Study	3
THTR 232	Acting: Classical Technique	3
THTR 306	Acting: Camera Technique	3
THTR 307	Acting: Advanced Camera Techniques	3
THTR 311	Audition Laboratory	1
THTR 312	Playwriting	3
THTR 314	Advanced Playwriting	3
THTR 316	Screenwriting	3
THTR 323	Topics in Design	3
THTR 334	Shakespeare: Histories and Tragedies	3
THTR 335	Shakespeare: Comedies and Romances	3
THTR 375	Voice	3
THTR 376	Advanced Vocal Techniques	3
THTR 385	Rehearsal and Production	1 - 3
THTR 386	Rehearsal and Performance	1

THTR 397	Honors Studies I	3
THTR 398	Honors Studies II	3
THTR 399	Independent Study in Theater Arts	1 - 3

Concentration in Acting

THTR 231	Acting: Advanced Scene Study	3
THTR 232	Acting: Classical Technique	3
THTR 375	Voice	3
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	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.	3	
Total Units	9	

Concentration in Dramatic Writing

THTR 312	Playwriting	3
THTR 314	Advanced Playwriting	3
THTR 316	Screenwriting	3
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:

THTR 100	Introduction to Acting	3
THTR 110	Introduction to Theater	3
THTR 111	Introduction to Design	3

One of the following two courses:

THTR 325	Development of Theater: Beginnings to English Renaissance	3
THTR 326	Development of Theater: Renaissance to Romanticism	3

Plus two additional courses above the 200 level

Acting

THTR 100	Introduction to Acting	3
THTR 103	Acting: Scene Study	3
THTR 201	Movement	3
THTR 231	Acting: Advanced Scene Study	3
THTR 375	Voice	3

One of the following two courses:

THTR 325	Development of Theater: Beginnings to English Renaissance	3
THTR 326	Development of Theater: Renaissance to Romanticism	3

Design/Tech

THTR 105	Introduction to Stagecraft	3
THTR 111	Introduction to Design	3

One of the following two courses:

THTR 325	Development of Theater: Beginnings to English Renaissance	3
THTR 326	Development of Theater: Renaissance to Romanticism	3

One of the following two courses:

THTR 327	American Drama	3
THTR 329	Modern and Contemporary Drama	3

Two of the following three courses:

THTR 223	Scenic Design	3
THTR 224	Lighting Design	3
THTR 225	Costume Design	3

Directing

THTR 100	Introduction to Acting	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

Dramatic Writing

THTR 100	Introduction to Acting	3
THTR 110	Introduction to Theater	3
THTR 312	Playwriting	3

THTR 316	Screenwriting	3
THTR 325	Development of Theater: Beginnings to English Renaissance	3
THTR 326	Development of Theater: Renaissance to Romanticism	3

Graduate Programs

Master of Arts in Theater

Master of Arts students prepare for careers in the professional theater and education, or for further pursuit of graduate study. The MA degree program offers broad-based advanced study in the literature and critical analysis of theater, with the opportunity to focus in a specialization of the student's choice. A bachelor's degree and strong academic record are required for admission; although no specific undergraduate degree requirements exist, a background in drama is obviously helpful.

Requirements for the degree include:

1. A minimum of 30 hours of course work beyond the bachelor's degree
2. A cumulative GPA of 3.0 or better for all course work
3. Successful completion of the thesis/project

The curriculum consists of 15 hours of comprehensive course work, 6 hours of specialized focus course work, and 9 hours of master's project or thesis writing.

All MA students must take the following courses (15 hours):

- THTR 425 Development of Theater: Beginnings to English Renaissance (3)
- THTR 426 Development of Theater: Renaissance to Romanticism (3)
- THTR 427 American Drama: American Drama (3) or THTR 429 Modern and Contemporary Drama (3)
- THTR 501 Dramatic Text Analysis (3)
- THTR 509 Performance History (3)

Students may then select from specific interest course tracks (6 hours), such as:

- Directing (taking THTR 430 Play Directing I (3) and THTR 431 Play Directing II (3),
- Dramatic Writing (taking THTR 412 Playwriting (3) and THTR 414 Advanced Playwriting (3) or THTR 412 Playwriting (3) and THTR 416 Screenwriting (3), or
- Theater Studies (individualized program consisting of two courses in the Department of Theater or in another department, selected by student with consent of the advisor and the approval of the theater graduate program (6 total)

Finally, students must take 9 hours of THTR 644 M.A. Project. The project or thesis must be agreed upon with the student's advisor and have the approval of the department.

Master of Fine Arts in Acting

In 1996, Case Western Reserve University and Cleveland Play House joined forces to create a Master of Fine Arts program in acting. The MFA is a terminal professional degree, and candidacy for the program requires an undergraduate degree, some theatrical experience, or demonstrable potential for work at the graduate level. In addition, candidates must provide evidence of technical skill and creative ability.

At the end of each semester in residence, each student's progress is evaluated. 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. 82 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 Cleveland Play House

Course requirements for the MFA in acting are as follows:

Courses in acting, including script analysis, acting theory, characterization, modernist playwrights, camera technique, and the classical canon.	24
Courses in movement, including mask work, physical awareness, and stage combat.	12
Courses in voice, including voice production, breath control, and integration with text.	12
Courses in speech, including stage speech, dialects, and verse and lyric drama	8
Courses in history and theory, professional internships, solo projects, and professional seminars	20
Two courses in crafting a thesis portfolio	6
THTR 401 Graduate Movement I: Foundations	
THTR 402 Graduate Movement II: Creations	
THTR 403 Graduate Movement III: Stage Combat	
THTR 404 Graduate Movement IV: Genres and Styles	
THTR 473 Graduate Voice Technique I	
THTR 474 Graduate Voice Technique II	
THTR 475 Graduate Voice Technique III: Classical Texts	
THTR 476 Graduate Voice Technique IV	
THTR 479 Graduate Stage Speech I: Phonetics	
THTR 501 Dramatic Text Analysis	
THTR 509 Performance History	
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 535 Graduate Acting V: Camera Technique	
THTR 540 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 611	Professional Showcase
THTR 630	Performance Studio
THTR 642	Thesis Portfolio I
THTR 643	Thesis Portfolio II
Total Units	82

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 103. Acting: Scene Study. 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 theater terminology and technology with an emphasis on scenic construction, lighting, stage rigging, painting, and production. A practicum in wood shop and stage construction.

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 Units.

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. 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 100 or THTR 101 or THTR 102.

THTR 204. Introduction to Stage Combat. 3 Units.

Students will learn the mechanics and technique of unarmed and armed stage combat, following the general curriculum set forth by the Society of American Fight Designers (SAFD). Students will experience the process involved in learning, rehearsing, and performing a fight scene for the stage. This will include academic analysis and discussion, a variety of training exercises, and short choreography performance.

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 207. Our Heroes, Ourselves: Superheroes and Popular Culture. 3 Units.

Since the beginning of cinema, audiences have flocked to see larger-than-life superheroes conquer the unconquerable while also teaching us about ourselves and confirming (or challenging) our world view. Beginning with cinematic serials in the 1920s and continuing to the recent Marvel production machine, these films not only depict a hero's efforts to save the world from disaster again and again, but also trace the development of our popular culture. Issues of violence, nationalism, 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.

THTR 223. Scenic Design. 3 Units.

This course introduces scenic design techniques, approaches, and tools. Emphasis will be on developing ideas through script analysis, visual research, and analysis of the physical theater space, and finally, the communication of ideas through drafting and model building. Prereq: THTR 111 or requisites not met permission.

THTR 224. Lighting Design. 3 Units.

This course introduces lighting design techniques and approaches by combining theory with practical application. The basics of lighting instruments and control consoles are used for practical projects examining light on the stage. The design process is explored through script analysis, visual research, and choice of instrumentation, and communicated with the drafted light plot. Prereq: THTR 111 or requisites not met permission.

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 231. Acting: Advanced Scene Study. 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 Odets. Counts as SAGES Departmental Seminar. Prereq: THTR 103.

THTR 232. Acting: Classical Technique. 3 Units.

An exploration of techniques to approach classical theater, with emphasis on the works of Shakespeare. Presents the challenges of working with heightened language in classical texts, and provides skills necessary to transfer modern acting methods to these more poetic plays. Prereq: THTR 103.

THTR 233. Acting: Improvisation Technique. 3 Units.

This course is designed to teach the introductory techniques utilized by all improvisational actors. While improvisation is best known as a comedic enterprise, this course will focus on using improvisational techniques/rules to improve communication skills, as well as a means to discover the "truth" of a moment. In the professional world, improv is taught as a communication tool to doctors, lawyers, law enforcement officers, corporate big wigs, and little wigs. In the medical field, the tools of improv are taught to patients suffering with PTSD, and children suffering from anxiety or social disorders to help them learn valuable communication skills. In addition to improving listening and communication skills, the student of this course will learn to apply improv skills to the performance of short improv games/skits, as well as long-form improv, known as The Harold. Prereq: THTR 103.

THTR 240. Video Production. 3 Units.

Video Production presents a hands-on introduction to video creation. Students are introduced to visual storytelling through concepts of single-camera production. The course will explore all areas of pre-production, followed by production with the use of a camcorder and accompanying aids, and finished in post-production through the use of nonlinear editing software. Students will learn the necessary skills to create short videos from paper to finished product.

THTR 301. Study Abroad at RADA: Dramatic 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 302. Study Abroad at RADA: Dramatic 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. Students cannot receive credit for both THTR 232L and THTR 303.

THTR 304. Study Abroad at RADA: Dramatic 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: 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 103.

THTR 307. Acting: Advanced Camera Techniques. 3 Units.

Advanced Camera Technique will build upon the fundamental skills learned in Camera Technique and focus on preparation for those seeking potential professional opportunities as performers in the film and television industry. It is a common misconception that there is a comprehensive approach to screen acting that encompasses all aspects of the work—film, television, commercials, etc. This couldn't be further from reality. Just as an actor would prepare differently when performing in a Shakespeare play versus that of a contemporary naturalistic American playwright, there are any number of styles and genres present in on-camera work and each require a distinctive skill set. In this course, students will come to understand the unique attributes explicit to varying formats of television programs and film genres, and develop an informed approach specific to both auditioning for and performing in each. In addition, students will have the opportunity to hone more advanced aspects of the craft itself, such as the challenge of performing multiple takes of emotionally-charged moments, developing credible character relationships without the benefit of the rehearsal time a performer typically experiences in theatre, and providing the editor with slight tonal variations from take to take while still retaining continuity of action and objective. Prereq: THTR 306.

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, THTR 312 and THTR 412.

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, THTR 314 and THTR 414. 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, THTR 316 and THTR 416. Prereq: THTR 312 or ENGL 305 or THTR 412.

THTR 319. Greek Tragedy: Plays and Performance in Ancient Athens. 3 Units.

This course provides students the opportunity to read a significant number of ancient Greek tragedies in modern English translations. We read, study, and discuss selected works by Aeschylus, Sophocles, and Euripides, as well as selected criticism, ancient and modern, of these plays. All semester we read the plays as literature composed for performance. We study literary elements within the plays and theatrical possibilities inherent in the texts. As we read the plays, we pay close attention to the historical context and look for what each play can tell us about myth, religion, ethics, and society in ancient Athens. Finally, we give 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 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 discuss the plays that they read in class. The course has three examinations and a final project that includes writing an essay and staging a monologue or scene from one of the tragedies. Offered as CLSC 319, CLSC 419, THTR 319, THTR 419, WLIT 319, and WLIT 419. Counts for CAS Global & Cultural Diversity Requirement.

THTR 322. Theater in Ancient Rome. 3 Units.

This course is designed as a continuation of and companion to CLSC/THTR/WLIT 319/419 Greek Tragedy: Plays and Performance in Ancient Athens, although it may be taken without having taken, or before having taken, that course. Students in Theater in Ancient Rome 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, that may include 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. 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 Roman civilization. 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 may include a brief survey of selected post-classical works indebted to the tradition of Roman drama and theater. Authors that may 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, THTR 322, THTR 422, WLIT 322, and WLIT 422. Counts for CAS Global & Cultural Diversity Requirement.

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 325. Development of Theater: Beginnings to English Renaissance. 3 Units.

This course 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 for undergraduates as THTR 325 and WLIT 360. Students who have taken THTR 228/WLIT 228 are not allowed to enroll in this course. Offered as THTR 325, WLIT 360, and THTR 425. Counts for CAS Global & Cultural Diversity Requirement. Prereq: At least Sophomore standing.

THTR 326. Development of Theater: Renaissance to Romanticism. 3 Units.

This course 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 326, WLIT 361, and THTR 426. Counts as SAGES Departmental Seminar. Counts for CAS Global & Cultural Diversity Requirement. Prereq: At least Sophomore standing.

THTR 327. American Drama. 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 THTR 327 and THTR 427.

THTR 329. Modern and Contemporary Drama. 3 Units.

This course 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, WLIT 329 and THTR 429. Counts for CAS Global & Cultural Diversity Requirement. Prereq: At least 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. Offered as THTR 330 and THTR 430. Prereq: THTR 101 or THTR 102, and at least Junior standing.

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. Offered as THTR 331 and THTR 431. Counts as SAGES Senior Capstone. Prereq: THTR 330, and at least Junior standing.

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. A student may not receive credit for both ENGL 324 and ENGL 324C. Offered as ENGL 324, ENGL 324C, 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.

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 325C, 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.

THTR 336. Concepts of Race within African American Plays. 3 Units.

This course provides an interdisciplinary study of race and African Americans within the context of African American plays. It will use the basic principles of African and African American history, urban studies, theater, sociology, economics and family life, etc. to identify aspects of race and racism. The course will provide an overview of race and racism in America through the lens of African American plays. The semester long course will analyze and discuss a conceptual understanding of how aspects of race serve as central themes within African American plays. The course will engage in various theories, discussions and debates about the African American experience and the relationship to race and racism displayed within the context of plays. Prereq: Sophomore standing.

THTR 375. Voice. 3 Units.

Development of the actor's vocal instrument. Work in articulation, range, and flexibility. Prereq: Theater major or consent of department.

THTR 376. Advanced Vocal Techniques. 3 Units.

Continuation of THTR 375. Prereq: THTR 375.

THTR 385. Rehearsal and Production. 1 - 3 Units.

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. Advanced Topics in Design/Technology. 3 Units.

This is an advanced-level course designed to provide an opportunity for Design/Technical Theater Undergraduates to do an advanced project in scenic, costume, or lighting design, or in a technical area such as stage management or technical direction, as would be expected in the professional theater. This project may be a realized departmental production or an unrealized project. Working on a departmental production requires attendance at production meetings, technical rehearsals and other scheduled meetings. Counts as SAGES Senior Capstone. Prereq: THTR 111 and (THTR 223, THTR 224, THTR 225, or THTR 227) or requisites not met permission.

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 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 Units.

Independent research and project work in areas of acting, design, voice, theater history, playwriting, directing, or theater management.

THTR 401. Graduate Movement I: Foundations. 3 Units.

This class is meant to both cleanse and develop the palette; it represents a series of exercises intended to remove habits and blockages, freeing your use of your instrument and expanding your conscious range of expression. The majority of what we will do is not immediately applicable technique in terms of playable actions during performance, but is meant to build your foundation as a performer, laying a groundwork for more powerful future performances. Prereq: Must be a student in M.F.A. Acting program.

THTR 402. Graduate Movement II: Creations. 3 Units.

This second class in our movement sequence is all about creation, from character creation to devised physical theatre. It is about play, in the theatrical sense Lecoq refers to as Jeu. We will play with character masks, from larval/basal masks to full face character masks, explore mime, slapstick/pratfalls, clown, and nonverbal scenes with music. The basic structure will be similar in many ways to that of the previous semester, with a mix of autocours and more fully fleshed out devised scenes at the end of each week or unit. Prereq: THTR 401.

THTR 403. Graduate Movement III: Stage Combat. 3 Units.

Students will learn the mechanics and technique of unarmed and armed stage combat, following the curriculum set forth by the Society of American Fight Designers (SAFD). We will experience the techniques and process involved in learning, rehearsing, and performing fight scenes for the stage, culminating in the opportunity to test for SAFD Certification in Unarmed and at least one sword style. Prereq: THTR 402.

THTR 404. Graduate Movement IV: Genres and Styles. 3 Units.

The push beyond realism and into theatrical styles becomes a proving ground for more advanced application of the fundamental acting concepts garnered in your prior course work, as well as a playground for physical transformation and movement skill. Presentational theatre will be our primary focus, whether in the form of Elizabethan, Restoration, Commedia, Farce, or other genres, including the many "isms." Your ability to synthesize prior training while applying specific templates of period movement or other genre styles is your capstone to our movement sequence. The basic structure will be similar in many ways to that of the previous semesters, with a mix of autocours and more fully fleshed out scenes at the end of each week or unit. Prereq: THTR 403.

THTR 412. 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, THTR 312 and THTR 412. Prereq: Must be a student in M.A. Theater program.

THTR 414. 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, THTR 314 and THTR 414. Prereq: Must be a student in M.A. Theater program.

THTR 416. 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, THTR 316 and THTR 416. Prereq: Must be a student in M.A. Theater program.

THTR 419. Greek Tragedy: Plays and Performance in Ancient Athens. 3 Units.

This course provides students the opportunity to read a significant number of ancient Greek tragedies in modern English translations. We read, study, and discuss selected works by Aeschylus, Sophocles, and Euripides, as well as selected criticism, ancient and modern, of these plays. All semester we read the plays as literature composed for performance. We study literary elements within the plays and theatrical possibilities inherent in the texts. As we read the plays, we pay close attention to the historical context and look for what each play can tell us about myth, religion, ethics, and society in ancient Athens. Finally, we give 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 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 discuss the plays that they read in class. The course has three examinations and a final project that includes writing an essay and staging a monologue or scene from one of the tragedies. Offered as CLSC 319, CLSC 419, THTR 319, THTR 419, WLIT 319, and WLIT 419. Counts for CAS Global & Cultural Diversity Requirement.

THTR 422. Theater in Ancient Rome. 3 Units.

This course is designed as a continuation of and companion to CLSC/THTR/WLIT 319/419 Greek Tragedy: Plays and Performance in Ancient Athens, although it may be taken without having taken, or before having taken, that course. Students in Theater in Ancient Rome 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, that may include 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. 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 Roman civilization. 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 may include a brief survey of selected post-classical works indebted to the tradition of Roman drama and theater. Authors that may 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, THTR 322, THTR 422, WLIT 322, and WLIT 422. Counts for CAS Global & Cultural Diversity Requirement.

THTR 425. Development of Theater: Beginnings to English Renaissance. 3 Units.

This course 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 for undergraduates as THTR 325 and WLIT 360. Students who have taken THTR 228/WLIT 228 are not allowed to enroll in this course. Offered as THTR 325, WLIT 360, and THTR 425. Counts for CAS Global & Cultural Diversity Requirement. Prereq: Must be a student in M.A. Theater program.

THTR 426. Development of Theater: Renaissance to Romanticism. 3 Units.

This course 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 326, WLIT 361, and THTR 426. Counts as SAGES Departmental Seminar. Counts for CAS Global & Cultural Diversity Requirement. Prereq: Must be a student in M.A. Theater program.

THTR 427. American Drama. 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 THTR 327 and THTR 427. Prereq: Must be a student in M.A. Theater program.

THTR 429. Modern and Contemporary Drama. 3 Units.

This course 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, WLIT 329 and THTR 429. Counts for CAS Global & Cultural Diversity Requirement. Prereq: Must be a student in M.A. Theater program.

THTR 430. 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. Offered as THTR 330 and THTR 430. Prereq: Must be a student in M.A. Theater program.

THTR 431. 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. Offered as THTR 331 and THTR 431. Counts as SAGES Senior Capstone. Prereq: Must be a student in M.A. Theater program.

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 476. Graduate Voice Technique IV. 3 Units.

The course is focused on increasing and enhancing the graduate student of acting's ability to handle the vocal challenges and technical demands of heightened texts. The class will use language and texts from poetry, classic novels and drama to accomplish this task. Prereq: Must be a student in M.F.A. Acting program.

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 M.F.A. Acting program.

THTR 493. Graduate Study in 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 theatrical adaptation from a non-dramatic source, as well as the creation of an interdisciplinary theater 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. Students will also gain practical experience by serving as dramaturgs on a Cleveland Play House production. Prereq: Department of Theater MA Students only.

THTR 501. Dramatic Text Analysis. 1 - 3 Units.

An exploration to the craft of reading a theatrical text. Methods for analyzing the action and dialogue of a play will be applied to dramatic text so that the theater artist can learn to transform a one-dimensional text into a three-dimensional performance work. Prereq: Must be a graduate student in the Department of Theater.

THTR 509. Performance History. 1 Unit.

Research seminar that covers the major movements in performance history and acting style. Readings cover the breadth of theater history with a focus on the art of the actor. Also includes material on major stylistic movements and acting techniques and the impact on the theatrical impulse. Prereq: Must be a student in M.F.A. Acting program.

THTR 512. Graduate Audition Lab. 1 - 2 Units.

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 M.F.A. Acting program.

THTR 530. Ensemble Technique. 1 - 2 Units.

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 M.F.A. 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 535. Graduate Acting V: Camera Technique. 3 Units.

The goal of this course will be to introduce the student to fundamental aspects of creating and performing a role on camera. Various exercises will be employed with the aim of eliciting active listening, spontaneity and a vibrant inner life. Technical aspects such as continuity and hitting marks will be addressed, as well as the professional process involved in production as applied to varying genres of film and television. Prereq: THTR 535.

THTR 540. 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 M.F.A. Acting program.

THTR 579. Graduate Stage Speech II: Articulation. 2 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 Units.

(Credit as arranged.)

THTR 610. Professional Internship. 1 - 4 Units.

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 611. Professional Showcase. 3 Units.

At the end of the curricular sequence, the graduating class presents an actors showcase, involving scenes and various special skills, to industry professionals (agents, managers, directors, artistic directors). The goal of the showcase is to present material that will illustrate the strengths of each ensemble member in order to procure professional representation. The course begins with a search for material from theatre, film and television sources. Prereq: Must be a student in M.F.A. Acting program.

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. 3 Units.

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 M.F.A. Acting program.

THTR 643. Thesis Portfolio II. 3 Units.

Course designed specifically for candidates in the Master of Fine Arts program in Acting. Graduate students enroll for the course during the spring semester of their third-year of study. A finalized thesis portfolio containing an in-depth exploration of at least three roles is completed, according to requirements set forth in the department's MFA Handbook. This completed document is presented at the end of the spring semester of the third year. Satisfactory completion of the portfolio is part of the requirements for awarding the Master of Fine Arts degree. Prereq: THTR 642 and must be a student in MFA Acting program.

THTR 644. M.A. Project. 1 - 12 Units.

Research and development of a Master of Arts project in Theater.

Washington Study Program

111 Mather House

<http://politicalscience.case.edu/undergraduate-programs/washington-center-program/>

Phone: 216.368.2646; Fax: 216.368.4681

Justin Buchler, Program Director

justin.buchler@case.edu

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).

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.

Students should contact the director for updated information about the program's operations during the COVID-19 pandemic.

Women's and Gender Studies Program

www.case.edu/artsci/womn (<http://www.case.edu/artsci/womn/>)

Phone: 216.368.2233

Cheryl Toman, Director

cheryl.toman@case.edu

The goal of the Women's and Gender Studies Program is to educate students in interdisciplinary approaches to feminist and queer theories of gender, sexuality, culture, and society. The program is committed to the study of women, the LGBTQ+ community, and sexuality. Students are exposed to a variety of forms of critical thinking in relation to:

1. the social construction of knowledge and philosophy
2. intersections of race/ethnicity, social class, gender, and sexuality in social systems of power and privilege
3. historicized and cross-cultural accounts of gender and gender inequality
4. literary criticism
5. approaches to science and medicine informed by "feminist empiricism" and "feminist standpoint" theories
6. contemporary theories of art, performance, language, jurisprudence, social science, and religion in the context of women's experience
7. studies of the body as a focal point for theorizing relations among the arts and sciences
8. social justice and activism as it pertains to women and gender both locally and globally

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.

Program Faculty

Cheryl Toman, PhD

Ruth Mulhauser Professor and Chair, Department of Modern Languages and Literatures; Director and Academic Representative, Women's and Gender Studies Program

Katia Almeida, PhD

Senior Instructor, Department of Anthropology

Karen Beckwith, PhD

Flora Stone Mather Professor and Chair, Department of Political Science

Elizabeth S. Bolman, PhD

Elsie B. Smith Chair in the Liberal Arts, and Chair, Department of Art History and Art

Joy Bostic, PhD

Associate Professor, Department of Religious Studies

Susan S. Case, PhD

Associate Professor, Department of Organizational Behavior, Weatherhead School of Management

Gabriela Copertari, PhD

Associate Professor, Department of Modern Languages and Literatures

Margaretmary Daley, PhD

Associate Professor, Department of Modern Languages and Literatures

Ananya Dasgupta, PhD

Assistant Professor, Department of History

Gilbert Doho, PhD

Associate Professor, Department of Modern Languages and Literatures; Director, Ethnic Studies Program

Elina Gertsman, PhD

Archbishop Paul J. Hallinan Professor in Catholic Studies II, Department of Art History and Art

Laura E. Hengehold, PhD

Professor, Department of Philosophy

Susan W. Hinze, PhD

Associate Professor, Department of Sociology

Justine Howe, PhD

Associate Professor, Department of Religious Studies

Heather McKee Hurwitz, PhD

Full-time Lecturer, Department of Sociology

Megan Swihart Jewell, PhD

Senior Instructor, Department of English

Marilyn Sanders Mobley, PhD

Professor, Department of English

Jacqueline C. Nanfito, PhD

Associate Professor, Department of Modern Languages and Literatures

Lisa Nielson, PhD

Anisfield-Wolf SAGES Fellow; Adjunct Assistant Professor, Department of Music

Gabrielle Parkin, PhD

Full-time Lecturer, Department of English

Liz Roccoforte, MA

Director, LGBT Center

Charles Rosenblatt, PhD

Professor and Ohio Eminent Scholar in Condensed Matter Physics, Department of Physics

Renee M. Sentilles, PhD

Henry Eldridge Bourne Professor of History, Department of History

Lihong Shi, PhD

Associate Professor, Department of Anthropology

Athena Vrettos, PhD

Associate Professor, Department of English; Academic Representative, Women's and Gender Studies Program

Affiliated faculty

Mary Grimm, MA

Associate Professor, Department of English

Elizabeth C. Meckes, PhD

Professor, Department of Mathematics, Applied Mathematics, and Statistics

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 1:

WGST 201/ HSTY 270/ENGL/ PHIL/RLGN 270	Introduction to Gender Studies	3
--	--------------------------------	---

Required Course 2: One of the following:

WGST 301	Women, Creativity and the Arts	3
WGST 318	History of Black Women in the U.S.	
WGST 326	Gender, Inequality, and Globalization	
WGST 353	Women in American History I	
WGST 354	Women in American History II	
WGST 365	Gender and Sex Differences: Cross-cultural Perspective	

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 30

Minor

Fulfillment of the minor requires completion of 18 credit hours according to the following course distribution:

Required Courses:

WGST 201	Introduction to Gender Studies	3
Five approved electives		15
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.

Courses

WGST 124. Sex and the City: Gender and Urban History. 3 Units.

Gender is an identity and an experience written onto the spaces of the city. The urban landscape—with its streets, buildings, bridges, parks and squares—shapes and reflects gender identities and sexual relations. This course examines the relationship between gender and urban space from the 19th century to the present, giving special attention to the city of Cleveland. Using Cleveland as our case study, this course will explore some of the many ways in which cities and the inhabitants of cities have been historically sexed, gendered, and sexualized. We will explore the ways in which gender was reflected and constructed by the built environment, as well as how urban space and urban life shaped gender and sexual identities. The course is organized thematically and explores different aspects of city life such as prostitution, urban crime, labor, politics, urban renewal and decay, consumption and leisure and the ways in which sex and gender intersects with these issues. Offered as HSTY 124 and WGST 124.

WGST 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, RLG 270, SOCI 201, and WGST 201. Counts for CAS Global & Cultural Diversity Requirement. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

WGST 227. Women, Gender, and Islam. 3 Units.

Women and gender are central to understanding Muslim societies, past and present. From debates about the veil to the wars in Iraq and Afghanistan, gendered concerns have been especially prominent in contemporary debates about the status of Islam in the modern world. How have Muslim thinkers interpreted Islamic scriptures with respect to topics such as marriage, child custody, inheritance, and sexuality? How is masculinity and femininity constructed? In what ways do their interpretations reflect the political, economic, and social conditions in which they lived? How does gender structure authority and power in Muslim communities? How and why have Muslim women become so important in contemporary debates over religious and national identity around the world? This course begins by examining the position of women and gender in the foundational Islamic texts, the Qur'an and Sunna (the practice of the Prophet Muhammad), and pre-modern interpretations of them. Then we will explore marriage and divorce in Muslim jurisprudence, in order to examine themes such as women's spiritual capacities, female leadership, sexuality, and slavery. Next, we will turn to the headscarf as a lens through which to explore modern configurations of gender and sexuality, as they intersect with conceptions of national belonging, religious identity, and individual freedom. Finally, we will study contemporary debates over polygyny, homosexuality, and female religious authority. There are no prerequisites for this course. No prior knowledge of Islam is expected. Offered as RLG 227 and WGST 227. Counts for CAS Global & Cultural Diversity Requirement.

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 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.

WGST 239. International Comparative Family Policy. 3 Units.

This course focuses on the connections between public policies and families and the values that enter into policy debates and family choices. It provides conceptual frameworks that can be used to identify and understand some of the influences underlying policy choices affecting families and also frameworks for evaluating the consequences of these choices for families of diverse structures, socio-economic statuses, and racial and ethnic backgrounds. We will apply this framework to topics such as maternity leave, child care, income assistance, and marriage promotion. We will compare U.S. policies to those of other industrialized countries, especially those in Italy. You will end the semester by conducting research on a social policy topic that we have not covered during the semester from understanding the initial social problem all the way through to making a policy recommendation to help you learn to explore a new topic independently. Central to the course are the intersections between families and governments via policy outputs, and the roles that citizens and family professionals can play in improving them. Using UNICEF resources, located in Florence, Italy, we will delve into evidence-based approaches for ameliorating suffering in young families across the globe. Using Florence as a classroom, we will explore differences in family life between the U.S. and Italy as a means to understand the ways in which the state must respond to differing cultures and needs. At the Innocenti Museum, in the same building as UNICEF's research offices, we will see an orphanage that began operations in 1445 and functioned as an orphanage and hospital until 1875, making it the oldest public institution in Italy. The building has been dedicated to the protection of children's rights and education since that time, and provides a backdrop for an early understanding of ways to think about family policy. Offered as SOCI 239 and WGST 239. Counts for CAS Global & Cultural Diversity Requirement.

WGST 252. Soul Murder: Religion and Sexual Abuse. 3 Units.

This seminar traces anthropological questions about religious-trauma, -memory, and -suffering through the lens of clergy sexual abuse. How is religious sexual abuse different than non-religious contexts? What can survivors teach us about the resilience of the human spirit? What are the racial dynamics of the recent Roman Catholic crisis? What flaws has it exposed in our criminal justice system? To answer questions like these, we will (i) begin the semester with anthropological studies of religion and trauma. Then we will (ii) examine grand jury investigations in the United States. Prepared by these theoretical and historical texts, we will (iii) evaluate case studies from the Roman Catholic context, including sexual abuse by nuns. We will use these examples to evaluate (iv) representations of the crisis in film and news media. Finally, we will (v) compare the Catholic crisis to recent sexual abuse scandals in American Jewish, Muslim, and Protestant communities. The comparative literature will include readings by Veena Das (cultural anthropology), Levinas (philosophy), Kathryn Lofton (religious studies), Timothy Lytton (law), Fortune (theology), and Frawley-O'Dea (psychology). Primary sources will include excerpts from special prosecutors and grand juries in Pennsylvania, Louisiana, and Massachusetts. Films will include "Doubt" and "Spotlight." By the end of the course, students will: - Know how to research and critique the legal, spiritual, and theoretical consequences of religious sexual abuse. - Be able to debate multiple theories of religion and trauma. - Be able to analyze data that is emotionally difficult and legally complex. Our seminars will include discussions, short writing assignments, collaborative work, and presentations. Offered as RLG 252 and WGST 252. Counts for CAS Global & Cultural Diversity Requirement.

WGST 257. 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. Counts for CAS Global & Cultural Diversity Requirement.

WGST 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 RLG 268, WGST 268, and JDST 268.

WGST 301. Women, Creativity and the Arts. 3 Units.

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 art 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. Counts for CAS Global & Cultural Diversity Requirement.

WGST 302. The Lemonade Class: Religion, Race, Sex and Black Music. 3 Units.

Charles Long suggests that black musical forms are creative responses to the particular circumstances of black peoples' presence in the U.S and black notions of the sacred. In April of 2016, Beyoncé released her visual album Lemonade two days after the death of Prince. This course is organized around the album's title cuts and links these two artists together in an examination of religion and musical performance as creative response to the racial and gendered conditions of black life. The course investigates how both artists have used music as a platform to explore issues of race, gender, commerce, sexuality, power and divinity. The course also looks at examples from the works of earlier artists who address similar themes such as Ma Rainey, Bessie Smith, Muddy Waters, Billie Holiday, Nina Simone, Little Richard, James Brown, Marvin Gaye, and Aretha Franklin. Offered as AFST 302, ETHS 302, MUHI 316, RLG 302, RLG 402, and WGST 302. Counts for CAS Global & Cultural Diversity Requirement.

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 AFST 304, RLG 304, RLG 404, WGST 304, and ETHS 304. Counts for CAS Global & Cultural Diversity Requirement.

WGST 308. Immigration and the Paris Experience. 3 Units.

Three-week immersion learning experience living and studying in Paris. The focus of the course is the culture, literature, and the arts of the African, Arab, and Asian communities of Paris. At least half of the course looks at issues surrounding immigration that affect women in particular. 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, ETHS 308, and WGST 308 students have the option of completing coursework in English. Graduate students have additional course requirements. Offered as FRCH 308, WLIT 308, ETHS 308, WGST 308, FRCH 408, and WLIT 408. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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, BETH 415A and WGST 315A. Counts for CAS Global & Cultural Diversity Requirement.

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 AFST 318, 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. Counts for CAS Global & Cultural Diversity Requirement. Prereq: PHIL 101.

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. Counts for CAS Global & Cultural Diversity Requirement. Prereq: SOCI 101 or permission of program director.

WGST 333. Science and Technology in France. 3 Units.

The course is an exploration of the development of science and technology in France, its rise in the 18th and 19th century, its subsequent decline until the mid-20th century, and its more recent renaissance—from both a scientific and humanities perspective. A significant component will focus on the contributions of women to science in France. Students will visit historical sites such as Marie Curie's laboratory and the Foucault pendulum, as well as current research facilities such as the Soleil Synchrotron outside of Paris and the Large Hadron Collider in France/Switzerland. To supplement these site visits, readings will come from the fields of science and technology (e.g., popular journals such as *Scientific American*), history, and French literature—either in French or English translation as appropriate for the student and the enrollment choice. Offered as FRCH 328, FRCH 428, PHYS 333, WGST 333, WLIT 353 and WLIT 453. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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, RLG 338 and WGST 339. Counts for CAS Global & Cultural Diversity Requirement.

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, and WGST 342. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement. 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. Counts for CAS Global & Cultural Diversity Requirement. 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, Power, and Politics. 3 Units.

Women, Power, 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 the political meanings and import of "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 the meanings of "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, 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. Counts for CAS Global & Cultural Diversity Requirement.

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 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, 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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

WGST 355. Hindu and Jain Bioethics: Special Focus on Women's and Gender Studies. 3 Units.

This course will provide both an introduction to basic Hinduism and Jainism and an introduction to Hindu and Jain bioethics. We will focus primarily on bioethical issues that pertain to women and that are gender related. These issues include abortion, menstruation, surrogacy, intersex, and other topics of controversy. Offered as ETHS 353, RLGN 353, RLGN 453, and WGST 355. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Navigating Gender in Organizations. 3 Units.

The purpose of this course is to prepare students to succeed in the workforce by understanding and exploring the opportunities and challenges of work across the lifespan and developing necessary skills to be effective. The course broadens understanding of gender dynamics and gendered structures in the workplace, intersections of gender with other identities, and the leadership and managerial issues affecting women and men in work organizations. The course helps students create a personal framework for how to develop a successful, happy and integrated work life in the global economy. Offered as ORBH 370 and WGST 370. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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.

WGST 399. Independent Study. 1 - 3 Units.

Independent research project in the fields of Women's and Gender Studies. Project proposals must be approved by a WGST faculty advisor. Students are strongly encouraged to work with a WGST program faculty member, but some projects may be supervised by faculty in other areas for by other qualified professionals with a WGST faculty advisor's approval. Credit varies with the scope and depth of the project. Prereq: WGST 201.

World Literature Program

Guilford House
 artsci.case.edu/world-literature (<http://artsci.case.edu/world-literature/>)
 Phone: 216.368.8983; Fax: 216.368.2216
 Marie Lathers, Program Director
 marie.lathers@case.edu

"I don't know what literature is exactly, but I know it makes me feel like I'm soaring." -- Unknown

The study of world literature, traditionally called comparative literature, involves a global approach to the art of literature in all its forms. "Literature" is a unique way of using language that seeks to express human wants and needs through poetic techniques, whether in prose, poetry, drama, or song. Cultures have always turned to literature—whether in oral or written form—to express basic values, concerns, despairs, dreams, and hopes. Literature comments on what "is", and reaches for what "might be". Cultural identity is created in part through literature, and literature is used to question—at times even undermine—that identity.

Literature may be a conservative force, emphasizing traditions, or a revolutionary force, provoking change from within.

The interaction of literatures from various regions of the world also transforms the art, as authors influence each other in what we might call a "global writing experiment". World Literature redefines the concept of "minor" or "third world" literatures, as it considers "marginal" artistic expressions to be as worthy of study as any classical tradition of the West or East.

The World Literature Program maintains the comparative spirit of the discipline, offering courses on individual authors, literary periods, regional literatures, themes, and schools of criticism.

The World Literature Program is fundamentally interdisciplinary. Courses come mostly from the Departments of Modern Languages and Literatures, Classics, and English, but students may also take approved courses from the Departments of Theater and Religious Studies. The major in World Literature requires reading in at least one language other than English, thus emphasizing that language and literature are imbricated. Film, as a narrative art, is also included in World Literature, as are some courses in linguistics.

Program Director

Marie Lathers, PhD
Elizabeth M. and William C. Treuhaft Professor of Humanities

Advisory Committee

Margaretmary Daley, PhD
Associate Professor, Department of Modern Languages and Literatures

William Marling, PhD
Professor, Department of English

Timothy Wutrich, PhD
Senior Instructor, Department of Classics

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
WLIT 387	Literary and Critical Theory	3
One of the following:		3
WLIT/CLSC 203	Gods and Heroes in Greek Literature	
WLIT/CLSC 204	Heroes and Hustlers in Roman Literature	
WLIT 365Q	Post-Colonial Literature	
Two courses in literature at the 300-level in a language other than English		6
Twelve hours of any WLIT course or cross-listed equivalent or any non-English literature course at the 200-level or above		12
Total Units		30

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.

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		9
Total Units		15

Graduate Program

The World Literature Program offers a master of arts degree. Students pursuing the MA take courses (consisting of 30 credit hours) from a variety of genres and regions of the world. They take an MA exam in lieu of writing a thesis. Students with an MA in World Literature may go on to a PhD program in a variety of fields, teach, conduct research for

humanities agencies or institutions, or work for global programs and institutions.

Courses

WLIT 154. Introducing Hinduism. 3 Units.

This "topics" course offers an introduction to the academic study of Hinduism. Whether approached through a particular theme or as a general historical introduction, each section of this course provides students with a general introduction to the academic study of religion and basic religious literacy in Hinduism, exploring forms of it in a diversity of cultural contexts. Section topics could include, but are not limited to: The Epics, Ritual, Contemporary Practices. Students may repeat the course for credit (up to 6 credits), provided that the two sections are different. Offered as RLGN 154 and WLIT 154. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

WLIT 204. Heroes and Hustlers in Roman 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. Counts for CAS Global & Cultural Diversity Requirement.

WLIT 205. Readings from the Epic of Gilgamesh. 3 Units.

In this course, we will read the entire Standard Babylonian recension of the Epic of Gilgamesh, considered the first great work of literature, from the original Akkadian text. While the primary goal of the course will be to become proficient readers of Akkadian, we will take some excursus on topics such as Babylonian religion, whether Gilgamesh was a historical figure or not, how the text was put together, and its possible influence on later heroic traditions such as the Greco-Roman. Offered as AKKD 205, AKKD 405, WLIT 205 and WLIT 405. Counts for CAS Global & Cultural Diversity Requirement. Prereq: AKKD 101 and AKKD 102.

WLIT 210. Ancient Near Eastern and Egyptian Literature. 3 Units.

This course offers a broad survey of Ancient Near Eastern and Egyptian literature. We will explore the rich heritage of narrative and mythological compositions through which the Mesopotamians and Egyptians tried to explain the natural phenomena, the religious beliefs and the history of the world around them. Examples of this include myths of creation, stories about gods, the great Flood, the Epic of Gilgamesh, the story of Sinuhe and many others. Other genre of literature will be explored such as the most ancient Legal Codes in history, Pyramid Texts, Wisdom Literature and Proverbs, Love Poetry and Humoristic compositions. Finally, some time will be devoted to the relation of these literatures with the texts that were composed in the Levant, where the alphabet was envisioned, and with the Bible, which grew within this Near Eastern context. All the texts will be read in English translation. Offered as ANEE 210 and CLSC 210.

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 Baghavad 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 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. Counts for CAS Global & Cultural Diversity Requirement.

WLIT 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.

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. Counts for CAS Global & Cultural Diversity Requirement.

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 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. Offered as CHIN 240, ASIA 240 and WLIT 240. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

WLIT 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. Offered as CHIN 250, ASIA 250 and WLIT 250. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

WLIT 265. Constructing the Samurai: Images of Japanese Warriors from 1100's to the Present. 3 Units.

From concepts of premodern warriors calling out their names before doing hand-to-hand combat to modern salary men crushing the world with their economic prowess, samurai have come to be an iconic image of the Japanese people. Throughout the semester we will pay particular attention to the central themes in the historiography of warrior society, roughly, the years between ca. 1110 and 1850 C.E. We will investigate how these documents were translated by modern societies, both east and west, in samurai film. Students will explore the category of "samurai" through reading selections from *The Tale of the Heike*, as well as selected Noh plays, legal documents, travel diaries, autobiographies, short stories, and historical texts. In addition, we will investigate other genres contributing to the construction of the idea of "samurai," such as film. This seminar will closely examine the concept of "samurai," particularly its connection to the Japanese identity using an interdisciplinary context of the arts, history, religion, and literature. We will also explore the ways in which daimyo (feudal lords), authors, Buddhist officials, and filmmakers throughout the world created, shaped, and altered the ideal image of the samurai. Key to understanding the concept of samurai will be wrestling with questions of authorship, spirit pacification, nationality, and patronage, with specific focus on the Japanese relationship with Western nations and cultures. We will focus on language and its role in legitimizing the global concepts of "samurai" and "bushido." This class will provide additional insight geared toward the cultural study of linguistic identities beyond those informed by the English language and will include terms expressed in Japanese. Many of the resources used in this course will be translated from the Japanese, allowing us to consider Naoki Sakai's theories of enunciation/ translation/ subjectivity, Haruo Shirane's theory of reception, and Michael Emmerich's theory of replacement. Especially important will be to focus on terms in Japanese with no, or poor, English equivalent (such as samurai, shogun, daimyo, bushido, etc.) but with clear images in the English-speaking imagination(s). The instructor will provide background information on political, cultural, and religious history. Class sessions will be conducted in English and combine lectures, discussion, audio-visual materials, and creative as well as analytical writing exercises. All readings and films will be in English or with English subtitle. Offered as JAPN 265 and WLIT 265. Counts for CAS Global & Cultural Diversity Requirement.

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 and 21st centuries. May include authors from France, Italy, Spain, Germany, and Scandinavia. Offered as ENGL 291 and WLIT 291. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Immigration and the Paris Experience. 3 Units.

Three-week immersion learning experience living and studying in Paris. The focus of the course is the culture, literature, and the arts of the African, Arab, and Asian communities of Paris. At least half of the course looks at issues surrounding immigration that affect women in particular. 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, ETHS 308, and WGST 308 students have the option of completing coursework in English. Graduate students have additional course requirements. Offered as FRCH 308, WLIT 308, ETHS 308, WGST 308, FRCH 408, and WLIT 408. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

WLIT 315. Origins of Anime: Classical Texts, Modern Manga, Anime, and Tales. 3 Units.

Modern anime and manga authors and artists captivate audiences with rich stories and stylized art. This course investigates the origins of these stories by engaging premodern Japanese texts (in English language translation) and modern literary theory. Throughout the semester we will pay particular attention to commonalities among these literatures and narrative genres, as well as the extent they differ due to temporal/socio/religio/political concerns. Western and Asian literary theories, especially those concerning topics of translation, replacement, negotiation with classics, and gender and sexuality will also be extensively explored. We will interpret the historic human endeavor of story telling within the contexts of time and space and through a critical self-awareness of our own positions in the modern world. Students will prepare individual research projects and be responsible for finding and presenting primary sources and secondary research. The instructor will provide background information on political, cultural, and religious history as well as present on details of literary theory. The aim is to encourage students to critically analyze the modern perception of past events. Every topic will be addressed in three phases. First, the students will discover historical events, literature, and people through reading primary sources in English translation. In a second phase, we will see how these stories are depicted in movies, animation, or manga. Finally, students will perform research to explore the differences between the premodern sources and their modern adaptation and determine how we can use such a comparison to critically analyze the way modern storytellers recreate the past. Class sessions will combine lectures, discussion, and audio-visual materials. Offered as JAPAN 315 and WLIT 315. Counts for CAS Global & Cultural Diversity Requirement.

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 319. Greek Tragedy: Plays and Performance in Ancient Athens. 3 Units.

This course provides students the opportunity to read a significant number of ancient Greek tragedies in modern English translations. We read, study, and discuss selected works by Aeschylus, Sophocles, and Euripides, as well as selected criticism, ancient and modern, of these plays. All semester we read the plays as literature composed for performance. We study literary elements within the plays and theatrical possibilities inherent in the texts. As we read the plays, we pay close attention to the historical context and look for what each play can tell us about myth, religion, ethics, and society in ancient Athens. Finally, we give 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 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 discuss the plays that they read in class. The course has three examinations and a final project that includes writing an essay and staging a monologue or scene from one of the tragedies. Offered as CLSC 319, CLSC 419, THTR 319, THTR 419, WLIT 319, and WLIT 419. Counts for CAS Global & Cultural Diversity Requirement.

WLIT 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. Offered as: CHIN 320, ASIA 320 and WLIT 320. Counts for CAS Global & Cultural Diversity Requirement.

WLIT 322. Theater in Ancient Rome. 3 Units.

This course is designed as a continuation of and companion to CLSC/THTR/WLIT 319/419 Greek Tragedy: Plays and Performance in Ancient Athens, although it may be taken without having taken, or before having taken, that course. Students in Theater in Ancient Rome 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, that may include 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. 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 Roman civilization. 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 may include a brief survey of selected post-classical works indebted to the tradition of Roman drama and theater. Authors that may 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, THTR 322, THTR 422, WLIT 322, and WLIT 422. Counts for CAS Global & Cultural Diversity Requirement.

WLIT 329. Modern and Contemporary Drama. 3 Units.

This course 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, WLIT 329 and THTR 429. Counts for CAS Global & Cultural Diversity Requirement. Prereq: At least 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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

WLIT 336. 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 337. Love and Loss: Reading The Tale of Genji. 3 Units.

Murasaki Shikibu's *The Tale of Genji* (c. 1000 CE), the great Japanese classic often referred to as "the world's first novel," has been praised by countless readers and scholars since it was first circulated within the imperial court. In this course we will read the entire text in English translation. We will focus on themes of love and loss, paying special attention to the substitution that results from the hero, the shining prince Genji, losing his mother at a tender age and attempting to fill the void she left. Since Genji is popularly thought of as a "playboy," we will investigate the thematic, historic, political, social, and religious descriptions within Genji's (many) love affairs, with a special emphasis on issues of gender. We will also consider the poetry, imagery, costume, music, religion, theater, and material culture of the mid-Heian era, which is encapsulated in the tale. Students will prepare individual research projects and be responsible for finding and presenting primary sources and secondary research. The instructor will provide background information on political, cultural, and religious history as well as present on details of literary theory. The aim is to encourage students to critically analyze the modern perception of the past. Class sessions will combine lectures, discussion, and audio-visual materials. All material is in English translation. There are no prerequisites. The course is conducted in English. Offered as JAPN 337 and WLIT 337.

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. Counts for CAS Global & Cultural Diversity Requirement.

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 353. Science and Technology in France. 3 Units.

The course is an exploration of the development of science and technology in France, its rise in the 18th and 19th century, its subsequent decline until the mid-20th century, and its more recent renaissance—from both a scientific and humanities perspective. A significant component will focus on the contributions of women to science in France. Students will visit historical sites such as Marie Curie's laboratory and the Foucault pendulum, as well as current research facilities such as the Soleil Synchrotron outside of Paris and the Large Hadron Collider in France/Switzerland. To supplement these site visits, readings will come from the fields of science and technology (e.g., popular journals such as *Scientific American*), history, and French literature—either in French or English translation as appropriate for the student and the enrollment choice. Offered as FRCH 328, FRCH 428, PHYS 333, WGST 333, WLIT 353 and WLIT 453. Counts for CAS Global & Cultural Diversity Requirement.

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 and WLIT 355. Counts as SAGES Departmental Seminar. Counts for CAS Global & Cultural Diversity Requirement.

WLIT 360. Development of Theater: Beginnings to English Renaissance. 3 Units.

This course 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 for undergraduates as THTR 325 and WLIT 360. Students who have taken THTR 228/WLIT 228 are not allowed to enroll in this course. Offered as THTR 325, WLIT 360, and THTR 425. Counts for CAS Global & Cultural Diversity Requirement. Prereq: At least Sophomore standing.

WLIT 361. Development of Theater: Renaissance to Romanticism. 3 Units.

This course 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 326, WLIT 361, and THTR 426. Counts as SAGES Departmental Seminar. Counts for CAS Global & Cultural Diversity Requirement. Prereq: At least Sophomore standing.

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 AFST 363H, ENGL 363H, ETHS 363H, WLIT 363H, ENGL 463H, and WLIT 463H. Counts for CAS Global & Cultural Diversity Requirement. 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, ENGL 365EC, ENGL 465E, WLIT 365E and WLIT 465E. Counts for CAS Global & Cultural Diversity Requirement. 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 AFST 365N, ENGL 365N, ETHS 365N, WLIT 365N, ENGL 465N, and WLIT 465N. Counts for CAS Global & Cultural Diversity Requirement. 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, ENGL 365QC, ETHS 365Q, WLIT 365Q, ENGL 465Q, and WLIT 465Q. Counts for CAS Global & Cultural Diversity Requirement. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

WLIT 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. Counts for CAS Global & Cultural Diversity Requirement. Prereq: ENGL 150 or passing letter grade in a 100 level first year seminar in FSCC, FSNA, FSSO, FSSY, FSTS, or FSCS.

WLIT 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. 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.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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. Advanced Topics in Akkadian Literature. 3 Units.

Directed readings in selected Akkadian texts in the cuneiform script either of the Old Babylonian or the Neo-Assyrian periods to serve the individual interests and needs of students (texts may be drawn from a variety of text genres: mythological, historical, scientific, medical, correspondence, religious, etc.). Offered as AKKD 395, AKKD 495, WLIT 395 and WLIT 495. Counts for CAS Global & Cultural Diversity Requirement. Prereq: AKKD 101 and AKKD 102.

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 Units.

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 405. Readings from the Epic of Gilgamesh. 3 Units.

In this course, we will read the entire Standard Babylonian recension of the Epic of Gilgamesh, considered the first great work of literature, from the original Akkadian text. While the primary goal of the course will be to become proficient readers of Akkadian, we will take some excursus on topics such as Babylonian religion, whether Gilgamesh was a historical figure or not, how the text was put together, and its possible influence on later heroic traditions such as the Greco-Roman. Offered as AKKD 205, AKKD 405, WLIT 205 and WLIT 405. Counts for CAS Global & Cultural Diversity Requirement. Prereq: AKKD 101 and AKKD 102.

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. Immigration and the Paris Experience. 3 Units.

Three-week immersion learning experience living and studying in Paris. The focus of the course is the culture, literature, and the arts of the African, Arab, and Asian communities of Paris. At least half of the course looks at issues surrounding immigration that affect women in particular. 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, ETHS 308, and WGST 308 students have the option of completing coursework in English. Graduate students have additional course requirements. Offered as FRCH 308, WLIT 308, ETHS 308, WGST 308, FRCH 408, and WLIT 408. Counts for CAS Global & Cultural Diversity Requirement. 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 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 419. Greek Tragedy: Plays and Performance in Ancient Athens. 3 Units.

This course provides students the opportunity to read a significant number of ancient Greek tragedies in modern English translations. We read, study, and discuss selected works by Aeschylus, Sophocles, and Euripides, as well as selected criticism, ancient and modern, of these plays. All semester we read the plays as literature composed for performance. We study literary elements within the plays and theatrical possibilities inherent in the texts. As we read the plays, we pay close attention to the historical context and look for what each play can tell us about myth, religion, ethics, and society in ancient Athens. Finally, we give 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 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 discuss the plays that they read in class. The course has three examinations and a final project that includes writing an essay and staging a monologue or scene from one of the tragedies. Offered as CLSC 319, CLSC 419, THTR 319, THTR 419, WLIT 319, and WLIT 419. Counts for CAS Global & Cultural Diversity Requirement.

WLIT 422. Theater in Ancient Rome. 3 Units.

This course is designed as a continuation of and companion to CLSC/THTR/WLIT 319/419 Greek Tragedy: Plays and Performance in Ancient Athens, although it may be taken without having taken, or before having taken, that course. Students in Theater in Ancient Rome 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, that may include 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. 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 Roman civilization. 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 may include a brief survey of selected post-classical works indebted to the tradition of Roman drama and theater. Authors that may 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, THTR 322, THTR 422, WLIT 322, and WLIT 422. Counts for CAS Global & Cultural Diversity Requirement.

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. Counts for CAS Global & Cultural Diversity Requirement.

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 434. 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 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. Counts for CAS Global & Cultural Diversity Requirement.

WLIT 436. Elegiac Poetry. 3 Units.

In this course we shall translate and interpret selected elegies by Catullus, Tibullius, 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 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 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-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 453. Science and Technology in France. 3 Units.

The course is an exploration of the development of science and technology in France, its rise in the 18th and 19th century, its subsequent decline until the mid-20th century, and its more recent renaissance—from both a scientific and humanities perspective. A significant component will focus on the contributions of women to science in France. Students will visit historical sites such as Marie Curie's laboratory and the Foucault pendulum, as well as current research facilities such as the Soleil Synchrotron outside of Paris and the Large Hadron Collider in France/Switzerland. To supplement these site visits, readings will come from the fields of science and technology (e.g., popular journals such as *Scientific American*), history, and French literature—either in French or English translation as appropriate for the student and the enrollment choice. Offered as FRCH 328, FRCH 428, PHYS 333, WGST 333, WLIT 353 and WLIT 453. Counts for CAS Global & Cultural Diversity Requirement.

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 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 AFST 363H, ENGL 363H, ETHS 363H, WLIT 363H, ENGL 463H, and WLIT 463H. Counts for CAS Global & Cultural Diversity Requirement. 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, ENGL 365EC, ENGL 465E, WLIT 365E and WLIT 465E. Counts for CAS Global & Cultural Diversity Requirement. 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 AFST 365N, ENGL 365N, ETHS 365N, WLIT 365N, ENGL 465N, and WLIT 465N. Counts for CAS Global & Cultural Diversity Requirement. 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, ENGL 365QC, ETHS 365Q, WLIT 365Q, ENGL 465Q, and WLIT 465Q. Counts for CAS Global & Cultural Diversity Requirement. 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. Counts for CAS Global & Cultural Diversity Requirement. 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. 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 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. Counts for CAS Global & Cultural Diversity Requirement. 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. Advanced Topics in Akkadian Literature. 3 Units.

Directed readings in selected Akkadian texts in the cuneiform script either of the Old Babylonian or the Neo-Assyrian periods to serve the individual interests and needs of students (texts may be drawn from a variety of text genres: mythological, historical, scientific, medical, correspondence, religious, etc.). Offered as AKKD 395, AKKD 495, WLIT 395 and WLIT 495. Counts for CAS Global & Cultural Diversity Requirement. Prereq: AKKD 101 and AKKD 102.

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 601. Independent Study. 1 - 18 Units.

For graduate students under special circumstances. Prereq: Graduate standing.

WLIT 651. Thesis M.A.. 1 - 18 Units.

(Credit as arranged.)

INDEX

A

Academic English Proficiency Program for International Graduate Students	4
Anthropology	4
Art History and Art	22
Asian Studies Program	46
Astronomy	50

B

Biochemistry	55
Biology	58

C

Chemistry	89
Childhood Studies Program	100
Classics	102
Cognitive Science	115
College of Arts and Sciences	2
Communication Sciences Program	123
Computer Science	141

D

Dance	141
-------------	-----

E

Earth, Environmental, and Planetary Sciences	145
Economics	152
English	153
Environmental Studies Program	167
Ethnic Studies Program	168
Evolutionary Biology Program	177

F

French and Francophone Studies Program	179
--	-----

G

Gerontological Studies Program	180
--------------------------------------	-----

H

History	182
History and Philosophy of Science Program	204

I

International Studies Program	205
-------------------------------------	-----

J

Japanese Studies Program	206
Judaic Studies Program	210

M

Mathematics and Physics Program	214
Mathematics, Applied Mathematics, and Statistics	212
Military Ethics Program	294
Modern Languages and Literatures	234
Music	257

N

Natural Sciences Program	283
Nutrition	284

O

Origins Sciences Program	290
--------------------------------	-----

P

Philosophy	292
Physics	303
Political Science	323
Post-baccalaureate Readiness Instruction for bioMedical Education (PRIME) Certificate Program	339
Psychological Sciences	123
Public Policy Program	340

R

Religious Studies	340
-------------------------	-----

S

Social Justice Institute	356
Sociology	357

T

Teacher Licensure Program	369
Theater	372

W

Washington Study Program	383
Women's and Gender Studies Program	383
World Literature Program	390