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Key to Course Descriptions

The following abbreviations are used in course descriptions:

**Semester Offered**

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<thead>
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<th>Abbreviation</th>
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<tr>
<td>F</td>
<td>Fall Semester</td>
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<tr>
<td>Sp</td>
<td>Spring Semester</td>
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<tr>
<td>Su</td>
<td>Summer Semester</td>
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</tbody>
</table>

Courses listed in this catalog without F, Sp, or Su designation—the semester(s) the course is offered varies from year to year

**Instruction Types**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
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<tr>
<td>DIS</td>
<td><strong>Discussion</strong>: Classroom instruction carried on primarily through interaction among students and instructor. In some cases, it may supplement a large lecture.</td>
</tr>
<tr>
<td>LAB</td>
<td><strong>Laboratory</strong>: An aggregate of individual activity under supervision as a group; the meeting place has substantial facilities, instruments, or equipment for the purpose of the meeting and for specific use by the individual student.</td>
</tr>
<tr>
<td>LEC</td>
<td><strong>Lecture</strong>: Classroom instruction, primarily through lecture, presented by an instructor, with discussion not precluded but incidental to lecture.</td>
</tr>
<tr>
<td>REC</td>
<td><strong>Recitation</strong>: Classroom instruction carried on through interaction between instructor and students, designed to supplement a large lecture.</td>
</tr>
<tr>
<td>SEM</td>
<td><strong>Seminar</strong>: Classroom instruction for a limited number of students who share with the instructor responsibility for preparation of material to be discussed in class.</td>
</tr>
<tr>
<td>TUT</td>
<td><strong>Tutorial</strong>: Individual study and instruction usually arranged by mutual agreement of instructor and student.</td>
</tr>
</tbody>
</table>
**Aerospace Engineering**

**MAE 177 Introduction to Engineering Drawing and CAD**

Credits: 2  
Prerequisites: None  
Corequisites: None  
Type: LEC/LAB  
Provides a first exposure to mechanical design for engineers. Includes the nature and visual representation of mechanical components and principles of engineering drawing and sketching for mechanical design. Utilizes up-to-date computer-aided design software (such as AutoCad) for mechanical drawings and mechanical designs.

**MAE 204 Thermodynamics I**

Credits: 3  
Prerequisites: MTH 142 or equivalent  
Corequisites: None  
Type: LEC  
Covers conservation of mass, first and second laws of thermodynamics, thermodynamic properties, equilibrium, and their application to physical and chemical systems.

**MAE 277 Introduction to Mechanical and Aerospace Engineering Practice**

Credits: 3  
Prerequisites: EAS 140  
Corequisites: MAE 177  
Type: LEC  
An overview of engineering industry; introduces engineering design concepts, reverse engineering, case studies including a hands-on product design project, basics of manufacturing processes, elementary modeling of engineering systems, and technical communications. Students who have completed MAE 311, MAE 364, or MAE 377 should see the Director of Undergraduate Studies to select an alternative course.

**MAE 311 Machines and Mechanisms I**

Credits: 3  
Prerequisites: EAS 209  
Corequisites: MAE 381  
Type: LEC  
Examines analysis and design of machine elements; including theories of failure, fatigue strength, and endurance limits; fluctuating stresses; Goodman diagram; and fatigue design under torsional and combined stresses. Also covers design of bolted connections, fasteners, welds, springs, ball and roller bearings, journal bearings, gears, clutches, and brakes.

**MAE 334 Introduction to Instrumentation and Computers**

Credits: 3  
Prerequisites: EAS 209  
Corequisites: EE 200  
Type: LEC/LAB  
Introduces data acquisition using A/D converters. Theory of A/D and D/A converters, fundamentals and examples of transducers used for mechanical measurements, static and dynamic response; amplifiers, theory of A/D and D/A converters, error analysis, elementary statistics. Two lectures and one three-hour laboratory weekly.

**MAE 335 Fluid Mechanics**

Credits: 3  
Prerequisites: EAS 209  
Corequisites: MAE 204  
Type: LEC  
Fluid statics; substantial derivatives; Reynolds transport equation; control volume approach for conservation of mass, linear momentum, moment of momentum, and the first law of thermodynamics; dimensional analysis and similarity; laminar and turbulent pipe flow of liquids; boundary-layer theory; one-dimensional, compressible flow; potential flow.

**MAE 336 Heat Transfer**

Credits: 3  
Prerequisites: EAS 209, MAE 204  
Corequisites: None  
Type: LEC  
Introduces the transport of heat by conduction, convection, and radiation. Topics include transient and steady-state, one- and multidimensional heat conduction (treated both analytically and numerically); single-phase, laminar and turbulent, and forced and natural convection both within ducts and on external surfaces (dimensional analysis and empirical correlations); two-phase transport (boiling and condensation); radiative properties of materials and analysis of radiative heat transfer in enclosures; and analysis of heat exchangers.

**MAE 338 Fluid and Heat Transfer Laboratory**

Credits: 1  
Prerequisites: MAE 335, MAE 336  
Corequisites: None  
Type: LAB  
Complements coursework in fluid mechanics and heat transfer.

**MAE 340 Systems Analysis**

Credits: 4  
Prerequisites: EAS 208, MAE 334  
Corequisites: MAE 376  
Type: LEC/LAB  
Modeling and analysis of system dynamics, with an emphasis on engineering design; characterization of electrical, mechanical, thermal, and hydraulic system components; characterization of transducers; use of state space and matrix notation in system modeling and analysis; formulation methods for systems containing multiterminal components; formulation of state equations; digital computer simulation techniques; and analog computer concepts. Three credit-hours of lecture, and one three-hour lab per week.

**MAE 347 Machine Design**

Credits: 4  
Prerequisites: MAE 204, MAE 336  
Corequisites: None  
Type: LEC/LAB  
Examines the design process in the context of product redesign assignments using CAD. Includes a final design project with professional documentation including sketches, detailed and assembly CAD drawings, a comprehensive written design analysis, and cost breakdown.

**MAE 385 Engineering Materials Laboratory**

Credits: 1  
Prerequisites: MAE 381  
Corequisites: None  
Type: LAB  
Involves experiments designed to illustrate the relationships among the processing, internal structure, material properties, and applications. Internal structure includes crystal structure, imperfections, and phases. Processing includes annealing, precipitation hardening, and heat treatment of steel. Properties include mechanical properties and corrosion behavior. Also considers current industrial needs.

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**Course Descriptions**
MAE 420 Biomechanics of the Musculoskeletal System
Credits: 3
Prerequisites: EAS 209
Corequisites: None
Type: LEC
Reviews basic aspects of anatomy, including forces transmitted in the body, bones as structural members, and joint and muscle forces. Also considers kinematics of body motions, instantaneous centers of joint motions, behavior of normal and abnormal joints, remodeling, biomaterials, and ligaments and tendons. Also studies functions of orthotics and prostheses, including design considerations. Involves a weekly seminar and one or two laboratory sessions.

MAE 422 Gas Dynamics
Credits: 3
Prerequisites: MAE 335
Corequisites: None
Type: LEC
Examines fundamentals of gas dynamics and compressible aerodynamics; including one-dimensional isentropic flow, one-dimensional flow with friction and with heating or cooling, and normal shocks. Also explores multidimensional flows, Prandtl-Meyer flow, oblique shocks, small perturbation theory, and supersonic airfoil theory.

MAE 423 Introduction to Propulsion
Credits: 3
Prerequisites: MAE 335
Corequisites: None
Type: LEC
Reviews combustion thermodynamics; flow in nozzle, diffuser, and constant area duct with shock; analysis and performance of air breathing and chemical rocket propulsion systems; performance of single and multi-stage rocket vehicles; and space missions.

MAE 424 Aerodynamics
Credits: 4
Prerequisites: MAE 335
Corequisites: None
Type: LEC/LAB
Examines flow over airfoils and wings; ideal flow theory, singularity solutions, superposition, source, and vortex panel methods; method of source panels; 2-D airfoil theory, pressure distributions and lift; effects of compressibility; finite wings; viscous aerodynamics; boundary-layer theory; and friction drag. Includes an aerodynamics laboratory experience, considering airfoil characteristics, boundary-layer measurements, and jet flow.

MAE 425 Spacecraft Dynamics and Control
Credits: 3
Prerequisites: MAE 376
Corequisites: None
Type: LEC
Introduces the concepts of spacecraft orbital mechanics and attitude dynamics. Orbital mechanics is the study of the positional motion, while attitude dynamics describes the orientation of the spacecraft. Topics include: review of rotational kinematics and dynamics, orbital mechanics, gravity turn and trajectory optimization, orbit lifetimes, three-body problem, orbit perturbations, orbit determination, spacecraft dynamics, spinning and three-axis stabilized spacecraft, and attitude determination.

MAE 428 Analytical Methods
Credits: 3
Prerequisites: MAE 376
Corequisites: None
Type: LEC
Covers solution methods for practical problems in mechanical and aerospace engineering, involving partial differential equations. Explores Fourier series, orthogonal functions, Laplace transforms, examples of partial differential equations (e.g. waves and heat conduction equations), method of separation of variables, and Bessel functions. Also involves an introduction to complex variable theory, and application to potential flow.

MAE 436 Flight Dynamics
Credits: 3
Prerequisites: MAE 340
Corequisites: None
Type: LEC
Reviews practical aerodynamics of wings and bodies, as well as performance of aircraft and missiles in the atmosphere. Topics include longitudinal, lateral, and directional static stability; control effectiveness; control forces; basic equations of motion of flight vehicles; aerodynamics, thrust and gravity forces; and stability derivatives. Analyzes aircraft and missile dynamic stability, as well as typical model responses to control inputs. Further studies autopilots, stability augmentation, and analysis of the pilot as a control-system element.

MAE 438 Smart Materials
Credits: 3
Prerequisites: MAE 381
Corequisites: None
Type: LEC
Introduces concepts and applications of smart materials, which refer to materials that can sense a certain stimulus and, in some cases, even react to the stimulus in a positive way so as to counteract negative effects of the stimulus. Strain/stress sensors and actuators are emphasized. Topics include intrinsically smart structural materials, piezoelectric and electrostrictive materials, magnetostrictive materials, electrorheological and magnetorheological fluids, shape memory materials and optical fibers.

MAE 439 Heating, Ventilation, and Air Conditioning
Credits: 3
Prerequisites: MAE 336
Corequisites: None
Type: LEC
Reviews psychrometrics, physiological factors, heating and cooling load calculations, refrigeration methods and applications to air conditioning, cryogenic methods, fan and duct analyses, and solar energy.
MAE 442 Computer-Aided Analysis in Fluid and Thermal Sciences

Credits: 3
Prerequisites: MAE 335, MAE 336, MAE 376
Corequisites: None
Type: LEC
For seniors and beginning graduate students interested in computer-based analysis of engineering problems in fluid mechanics and heat transfer. Emphasizes applications of computer analysis to engineering design of fluid/thermal systems. Surveys the general governing equations and methods to solve them, including finite-difference, finite-volume, panel methods, and finite element methods. Introduces state-of-the-art computer tools for analysis and graphical representation of results. Gives students a broad view of computational fluid mechanics for engineering applications in the fluid/thermal sciences.

MAE 443 Continuous Control System

Credits: 3
Prerequisites: MAE 340
Corequisites: None
Type: LEC
Examines system modeling and identification of plants to be controlled; use of feedback control systems; design of feedback control laws including PI, PD, block diagrams, transfer functions, and frequency response functions; control system design and analysis in the time domain and frequency domain; computer simulation of control systems; stability analysis using Routh-Hurwitz criterion; design for stability, speed of response, and accuracy; root locus, Bode, and Nyquist plots; compensation methods; and state space control design and analysis.

MAE 444 Digital Control Systems

Credits: 3
Prerequisites: MAE 443
Corequisites: None
Type: LEC/LAB
Characterization of discrete time systems; analysis of discrete control systems by time-domain and transform techniques; stability analysis ( Jury test, bilinear transformation, Routh stability test); deadbeat controller design; root- locus based controller design; discrete state variable techniques; synthesis of discrete time controllers; engineering consideration of computer controlled systems.

MAE 448 Issues in Concurrent Design

Credits: 3
Prerequisites: senior standing
Corequisites: None
Type: LEC
Current interest in incorporating quality and manufacturing concerns in the early stages of the design process has resulted in such concepts as concurrent engineering, total quality management, quality function deployment, robust design, Taguchi’s quality functions, teaming approaches for complex design, and many others. The course addresses these concepts, particularly as they pertain to complex engineering design. Investigates industrial case studies and design projects incorporating some or all of the above concepts, provides first-hand experience.

MAE 449 Design of Complex Engineering Systems

Credits: 3
Prerequisites: senior standing
Corequisites: None
Type: LEC
Applies domain-independent design methods and decision-support theories and tools to the design of large-scale, complex systems. Covers the role of design, decision-making, and open engineering systems in a globally competitive society. Topics include descriptive and prescriptive models of design, decision theory, utility theory, game theory, design of experiments, approximation, and stochastic and deterministic processes.

MAE 450 Design Process and Methods

Credits: 3
Prerequisites: senior standing
Corequisites: None
Type: LEC
Discusses the fundamental concepts and activities of design processes. Investigates domain-independent topics of design processes. These topics include idea conception, teamwork, quality, experimental design, optimization, and technical communication. In addition, discusses fundamental methods of design, including decision making, conceptual design, cost evaluation, ethics issues, and intellectual property issues, which are investigated through interactive lectures and individual and group exercises.

MAE 451 Road Vehicle Dynamics

Credits: 3
Prerequisites: MAE 340
Corequisites: None
Type: LEC
Covers the forces and torques generated by tires (under both traction and braking) and by the relative wind; two-wheel and four-wheel models of a vehicle; simplified stability and control of transients; steady-state response to external disturbances; effects of the roll degree of freedom; equations of motion in body-fixed coordinates; lateral load transfer; force-moment analysis; and applications of feedback-control theory to the design of subsystems for improved performance.

MAE 452 Tribology

Credits: 3
Prerequisites: senior standing or permission of instructor
Corequisites: None
Type: LEC
Explores friction, lubrication, and wear; contact of real surfaces; mechanics of friction; surface failures; boundary lubrication; fluid properties; thin-film lubrication; thick-film lubrication; and bearing and lubricant selection.

MAE 464 Manufacturing Automation

Credits: 3
Prerequisites: MAE 364
Corequisites: None
Type: LEC
Introduces the theory of automation as related to manufacturing and design integration, including hardware, software, and algorithm issues involved in fast and flexible product development cycles. Studies strategies of automated manufacturing systems; CAD-CAM; and integration, programming, and simulation. Additional topics include Robotics (e.g. applications in welding, material handling, and human intensive processes), Reverse Engineering (e.g. modeling product from laser and CMM data of parts), Virtual Environments (e.g. industrial applications of virtual reality and prototyping), Intelligent Diagnostics (e.g. sensor fusion for machine tool monitoring), Automated Inspection (e.g. computer vision and methods of automated quality control), and Design for Manufacturing (e.g. issues involved in concurrent product development).

MAE 467 Vibration and Shock

Credits: 3
Prerequisites: MAE 340, MAE 311 or MAE 415
Corequisites: None
Type: LEC
Examines mechanical vibration and shock; including free and forced, periodic, and aperiodic vibration of single-degree and multidegree of freedom systems.
MAE 477 Computer-Aided Design Applications

Credits: 3  
Prerequisites: senior standing  
Corequisites: None  
Type: LEC/LAB  
Considers concepts in computer-aided engineering, including principles of computer graphics, finite element analysis, kinematic analysis, and animation of mechanical systems. Studies the use of integrated CAD/CAE tools. Incorporates projects in solid modeling, stress analysis of machine parts and structures, and mechanism response and animation.

MAE 478 Cardiovascular Biomechanics

Credits: 3  
Prerequisites: MAE 335, senior standing in engineering  
Corequisites: None  
Type: LEC  
Introduces the mechanical behavior of the cardiovascular system, basic physiology, and application of engineering fundamentals to obtain quantitative descriptions. Major topics include physiology of blood, mechanics of the heart, dynamics of blood flow in the heart and circulation, control of cardiac output, blood pressure, and regional blood flow.

MAE 482 Introduction to Composite Materials

Credits: 3  
Prerequisites: MAE 381  
Corequisites: None  
Type: LEC  
Provides a basic understanding of composite materials (manufacturing and mechanical properties). Examines behavior of unidirectional and short-fiber composites; analysis of laminated composites; performance of composites, including fracture, fatigue, and creep under various conditions; fracture modes of composites; manufacturing and micro-structural characterization of composites; experimental characterization and statistical analysis; and polymeric, metallic, and ceramic composites.

MAE 484 Principles and Materials for Micro-Electro-Mechanical Systems (MEMS)

Credits: 3  
Prerequisites: MAE 381  
Corequisites: None  
Type: LEC  
Current interest in micro-electro-mechanical systems or MEMS is driven by the need to provide a physical window to the micro-electronics systems, allowing them to sense and control motion, light, sound, heat, and other physical phenomena. Such micro-systems that integrate microelectronics and sensing elements on the same chip present an interesting engineering problem in terms of their design, fabrication, and choice of materials. Addresses the design, fabrication, and materials issues involving MEMS. Displays these issues within the context of MEMS for mechanical sensing and actuation, magnetic devices, thermal devices, automotive applications, and Bio-MEMS for biomedical applications.

MAE 493 Mathematical Methods in Robotics

Credits: 3  
Prerequisites: MAE 376  
Corequisites: None  
Type: LEC  
A mathematical introduction to modeling, analysis and control of robotic systems. The first part of the course deals with the theoretical frameworks for modeling, analysis (kinematics and dynamics) and control of generic robotic mechanical systems, rooted in rich traditions of mechanics and geometry. The rest of the course will examine many of these issues in the context of serial-chain and parallel-chain manipulators, wheeled mobile robots (and hybrid combinations of these systems).

MAE 494 Design Project

Credits: 3  
Prerequisites: senior standing  
Corequisites: MAE 451  
Type: TUT  
Students working in teams of two or three under the supervision of a faculty member complete an original engineering design, which in some cases results in hardware. Design problems are drawn from industry and initiated by faculty. Where practical, two or more teams compete to solve the same problem. Teams meet individually with faculty on a weekly basis to discuss their projects.

MAE 496 Engineering Internship

Credits: 3  
Prerequisites: Senior standing and permission of instructor  
Corequisites: None  
Type: TUT  
Provides experience in real-world engineering problems for senior mechanical and aerospace students. Assigns projects from local industry. Normally requires students to spend eight hours weekly in an engineering office. Students must present written and oral reports. Students interested in an internship or co-op experience should also consider the EAS 396 and EAS 496 sequence.

MAE 498 Undergraduate Research & Creative Activity

Credits: 1  
Prerequisites: permission of instructor  
Corequisites: None  
Type: TUT  
Students collaborate with faculty research mentors on an on going project in a faculty member’s laboratory or conduct independent research under the guidance of a faculty member. This experience provides students with an inquiry based learning opportunity and engages them as active learners in a research setting. Arrangements must be made with a specific faculty member before registration.

African American Studies

AAS 100 Introduction to African American Studies

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Uses approaches and methods designed to explore and understand the African American experience and the African Diaspora. The course aims to acquaint students with the nature of African American studies as a field of intellectual inquiry and as a degree program offered by the University at Buffalo.

AAS 118 Introduction to African American Music

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Provides students with the history and traditions of African and African American music. Introduces students to all the various modes and genres such as spiritual, gospel, ragtime, jazz, rhythm ‘n blues, rock ‘n roll, soul and hip hop.

AAS 119 Research: Essential Composition Skills

Credits: 1  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Offers instruction in the elements of composition, and helps students improve their writing skills. Focuses on understanding the logic and style of argumentative, descriptive, expository, and narrative writing. Concentrates especially on the arrangement and form of documented and undocumented essays such as book reviews and term papers. Gives attention to the selection, interpretation, and evaluation of source material and to the physical appearance of essays.

AAS 184 Classic Black Prose

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Introduces students to classic writings of blacks in the Western Hemisphere. Readings include autobiographical or semi autobiographical works that focus upon physical and mental servitude and colonialism, migration and liberation struggles in the United States and the Caribbean, specifically.
AAS 230 Topics in African American Studies
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
A specific topic in the interdisciplinary field of African American Studies. Students prepare a bibliographical essay.

AAS 231 Topics in African American Studies
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
A specific topic in the interdisciplinary field of African American Studies. Students prepare a bibliographical essay.

AAS 232 Topics in African American Studies
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
A specific topic in the interdisciplinary field of African American Studies. Students prepare a bibliographical essay.

AAS 233 Topics in African American Studies
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
A specific topic in the interdisciplinary field of African American Studies. Students prepare a bibliographical essay.

AAS 234 Topics in African American Studies
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
A specific topic in the interdisciplinary field of African American Studies. Students prepare a bibliographical essay.

AAS 235 Topics in African American Studies
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
A specific topic in the interdisciplinary field of African American Studies. Students prepare a bibliographical essay.

AAS 236 Topics in African American Studies
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
A specific topic in the interdisciplinary field of African American Studies. Students prepare a bibliographical essay.

AAS 237 Topics in African American Studies
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
A specific topic in the interdisciplinary field of African American Studies. Students prepare a bibliographical essay.

AAS 238 Topics in African American Studies
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
A specific topic in the interdisciplinary field of African American Studies. Students prepare a bibliographical essay.

AAS 239 Topics in African American Studies
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
A specific topic in the interdisciplinary field of African American Studies. Students prepare a bibliographical essay.

AAS 241 African American History
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Surveys the history of African Americans from African origins to the present. The course focuses on the often overlooked but crucial role of African Americans in shaping US and world history. Topics include: West African civilizations, the slave trade and slavery, abolitionism and the Underground Railroad, Emancipation, post-slavery migrations and labor systems, the rise of Jim Crow, the Harlem Renaissance, the Civil Rights Movement and Black Power.

AAS 242 Black Child in America
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Focuses on the great variety of black children's experiences in the United States, including their experiences both during slavery in the Southern country towns and in the emerging "ghettos" in the North. The course also discusses historical development of social service programs such as Aid to Dependent Children and other government policies. It also explores various issues that contribute to the welfare of African American children.

AAS 250A Research Methods
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
A study of research methods and writing research papers. Students prepare a research paper from the computer. Psychology course completed prior to the course is desirable.

AAS 254 Blacks in Films 1
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines the various roles of blacks, both in films produced by black and by white film makers. The course offers a range of films, including the early silents of the 1920s-1930s, the black films of the sixties and seventies, and contemporary films. Guest lecturers (film stars, directors) discuss informally their roles in films.

AAS 255 Blacks in Films 2
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Beginning in the late 1940s a change in films dealing with blacks became evident. The social consciousness of the post World War II generation had an effect on the values and conditions faced by blacks. The film industry began to reflect this awareness by producing films that addressed social issues. Deals with the reflective films of the last half of the 20th century.

AAS 256A Urban American Studies
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
A study of the various ways in which urbanization has affected the lives of African Americans in the United States. Surveys the history of African Americans in the urban environment, looking at the various ways in which they have shaped and been shaped by urban life.

AAS 256B American City, African American Experience
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
An advanced seminar on African American urban experiences, focusing on the history of African American cities in the United States, looking at the various ways in which they have shaped and been shaped by urban life.

AAS 257A African American History
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Survey of the history of African Americans in the United States, from the colonial period to the present. Focuses on the impact of African American history on the development of the United States and on the development of African American communities.

AAS 257B African American History
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Continuation of the survey of the history of African Americans in the United States, focusing on the impact of African American history on the development of the United States and on the development of African American communities.

AAS 260 Major Issues in African American Studies
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Overview of the major issues in the field of African American studies. Offered as a series of lectures and assigned readings, this course uses a variety of disciplines to survey the conditions and development of African Americans from the Atlantic slave trade to the present.
AAS 294 Education of African Americans
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Examines education from the perspective of equality of educational opportunity for African Americans and other racial minorities. Considers both the history of the struggle for equality of educational opportunity by African-Americans and the many dimensions of the struggle today - both inside and outside the classroom. Topics include: Brown v. Board of Education, the Civil Rights Movement, racial perspectives on intelligence, affirmative action, the socio-economic and socio-psychological basis of school achievement, teachers and racial identity, the multi-cultural curriculum, race and ethnicity in higher education, desegregation and re-segregation.

AAS 301 African American Literature: Prose
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
A survey of African American literature from mid-eighteenth century to the present. Explores historical, cultural, and aesthetic influences. Writers include those from the fugitive slave, the Harlem Renaissance, the literary mainstreamers, the New Black Arts Movement and the modern Black womanist tradition.

AAS 302 Black Women Writers
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
A study of modern literature by Black women writers, with emphasis on the major traditions, i.e., naturalist, civil rights, the new Black Arts movement, Black womanism, etc. and the writers' contribution to the shaping of modern literary culture. Explores the writers' expressions of political, social, artistic and aesthetic issues.

AAS 305 Song, Sex, and Soul
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Uses the lyrics and rhythms of African American music to examine some of the cultural history of the United States. The examination emphasizes how the lyrics and rhythmic patterns of this music affect our daily lives.

AAS 306 Structure of Urban Policy
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
An introduction to poverty as a major social issue facing urban African-American communities. Uses an analysis of institutional discrimination to develop a comprehensive analysis of Black urban poverty as shaped by race, class, and gender. Topics covered might include surveying of how Black poverty has been analyzed in scholarship and public policy, assessing specific public policies such as Urban Renewal, school desegregation and busing, public housing, and Section 8 housing programs, for their effects on Black poverty, and exploring the special needs of specific poverty populations such as Black children.

AAS 315 African American Civilizations
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Provides an intensive examination of humans and society in ancient Africa, stretching back to humankind's evolution and including an analysis of early forms of African state formations. Ancient Africa is cut off from the period of European presence in Africa, marked by the beginnings of the Atlantic Slave Trade. The course features the following themes and topics: (1) Prehistoric ancient Africa; (2) the desiccation of the Sahara and its consequences; (3) Africa and Mediterranean civilizations; (4) Coptic Christianity and the early history of Christianity; (5) Islam and its brush with Christianity in ancient Africa; (6) Africa's ancient state formations; (7) the impact of Arab invasion and occupation on ancient African state formations; (8) the Bantu migration hypothesis; and (9) the mystery of the Great Zimbabwes. All of these lead to an examination of the dynamics of civilizations in ancient Africa, including their failed forms, using Arnold Toynbee's perspectives on the rise and fall of civilizations as a theoretical point of departure.

AAS 320 Research Methods in African American Studies
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces students to the interdisciplinary field of African American Studies, its relationship to other disciplines, and to social science research methodology. Students read the classic literature in the field and prepare annotated bibliographies. Topics covered may include slavery, colonialism, urbanization and migration, gender and gender construction, and intellectual movements.

AAS 326 African-American Political Development
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces students to black political development in the Western Hemisphere, particularly emphasizing the Caribbean area and the socio-political relationships between black West Indians and other black communities in the Western Hemisphere.

AAS 327 Current African History
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Considers major current events in Africa. However, in focusing on current events our approach involves examining the historical roots of these events.

AAS 328 Race, Ethnicity, and Education
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Explores how factors of race and ethnicity affect the relationship between schooling and society in the United States. Among the issues covered are school curriculum, equality of educational opportunity, socialization, power and ideology, school-government relations, and educational reform.

AAS 333 Race, Ethnicity, and Education
Credits: 3
Prerequisites: None
Corequisites: None
Type: TUT
A research course designed for students interested in investigating areas of study about African Americans and Diaspora Blacks.

AAS 334 African Diaspora
Credits: 3
Prerequisites: None
Corequisites: None
Type: TUT
A diaspora is not merely a spreading of a particular people, but literally a forced dispersal, touched off by some great cataclysmic event or process. Africa has experienced no fewer than two such processes (both at the hands of Europe): the slave trade and imperialism (or colonialism). These diasporas have profoundly shaped the world we live in today, though Africa and its diasporas have largely been treated as an afterthought in the study of world history. One major goal of this course is to study the processes of the African diasporas to understand how Africans and their descendants have impacted world history—a world historical agency that has generally been ignored or denied. Another major goal of this course concerns the understanding not so much of the past but of our world today.

AAS 355 Race, Class, and Society
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
A diaspora is not merely a spreading of a particular people, but literally a forced dispersal, touched off by some great cataclysmic event or process. Africa has experienced no fewer than two such processes (both at the hands of Europe): the slave trade and imperialism (or colonialism). These diasporas have profoundly shaped the world we live in today, though Africa and its diasporas have largely been treated as an afterthought in the study of world history. One major goal of this course is to study the processes of the African diasporas to understand how Africans and their descendants have impacted world history—a world historical agency that has generally been ignored or denied. Another major goal of this course concerns the understanding not so much of the past but of our world today.

AAS 361 Slavery and the Underground Railroad
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Deals with an aspect of American history (roughly 1830-1860) involving the quest for freedom by African slaves who ran away from bondage through an elaborate system of escape routes stretching from the U.S. South to the North and Canada. Labeled the “Underground Railroad,” these networks were managed ‘conductors’ who helped their ‘passengers’ (the escaped slaves) move from station to ‘station’ to reach freedom in the North. Probes the background history of slavery, the legislative backcloth of the Underground Railroad, its geography of routes, and the biography of its major ‘conductors.’ Explores the local history of the Underground Railroad of Western New York, including planned visits to its ‘stations’ in Buffalo, Rochester, and Ontario.
AAS 363 Junior Seminar: Directed Readings
Credits: 3
Prerequisites: permission of instructor
Corequisites: None
Type: TUT
Introduces students to the interdisciplinary field of African American Studies, its relationship to other disciplines, and to social science research methodology. Students read the classic literature in the field and prepare annotated bibliographies. Topics covered may include slavery, colonialism, urbanization and migration, gender and gender construction, and intellectual movements.

AAS 372 Selected African American Writers
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Focuses on an adherence to traditional themes in the African American canon and those writers whose outstanding efforts have continued the evolution of that canon. Discusses the themes of community and freedom and literacy, as well as the trope of black signifying.

AAS 377 Caribbean Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines the literature of the Islands within the context of historical, social, political, and economic circumstances that manifest themselves across linguistic boundaries. This seminar is devoted to major prose works written in English or in translation. Includes introductory lectures that examine broader issues relating to Caribbean literature. The class experience is enriched by videos and guest lecturers. The creative prose works are selected with an eye to thematic and conceptual variety.

AAS 386 Male-Female Relationships
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Explores the function of various societal traits that dominate a relationship and how religion, education, economic status, family beliefs, racial beliefs, and friends influence the way a couple interacts. There are many struggles in relationships that take on such forms as dominance or subservience, fear or hope, and jealousy or acceptance.

AAS 391 Black Family: The Old World and the New
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
An exploration of family life in Africa and the United States. Compares family structure in an agrarian culture and an industrial society. Examines the influences of race, class, religion, and government on the family. Topics also include familial responsibilities of health, education and general welfare.

AAS 392 The Black Church
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Explores the origin and development of the African American church and its role in the sociopolitical and economic organization of African Americans in a comprehensive historical and sociological overview of the African American religious experience. The course examines elements of the black church that have survived from Africa and includes considerations of the black presence in the Bible. It considers in some details the enlarged black church in the post-emancipation era, including its social roles in the economy, education, etc., and its transformation during the great migration of the World War I era. The course also considers the contribution of black theology to modern black liberation and the Civil Rights movement.

AAS 393 Survey of Black Middle Class
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Simultaneously examines two centuries of black middle class virtues and vices, while each student carries out a self-examination of his/her own middle-class status and/or aspirations. Achieve the second exercise with the aid of interest tests that serve as guides for each student’s five-year plan after graduation.

AAS 395: Black Gender Studies
Credits: 3
Semester: Prerequisites: None
Corequisites: None
Type: LEC
Introduction to how gender shapes the experiences of women and men of African descent. Emphasis is placed on Black women’s experiences in families, at work, with the media, with sexuality and fertility, and with political activism.

AAS 414 Health Problems in the Black Community
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Addresses issues of health and disease in the African Diaspora from the point of view of African people’s biology and culture. Includes African healing traditions in the Caribbean and North America, as well as black responses to modern medical revolutions. Examines selected public health issues in black communities, such as AIDS and homicide.

AAS 415 Black Face/White Forum
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Explores the cultural development of African Americans during the eighteenth, nineteenth, and twentieth centuries. Requires students to be familiar with the secondary literature on African Americans’ history and culture. Also analyzes some aspects of black social and political life in an urban setting.

AAS 416 Black/White View of America
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Examines how African Americans view themselves and how they view the opportunities available to them. We look at how the supposed differences in the viewpoints of blacks and whites divide American society into the haves and the have-nots, and how the similarities remain a secret hidden by our educational system and mass media.

AAS 417 Contemporary Black Film Culture
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Introduces the major images elements of sound, lights, space, and time-motion, and how they are used in film and television to influence perception. The course is designed to provide students with criteria to help them judge and experience media-articulated messages at different intellectual and emotional levels. Analyzes and discusses specially selected television and film materials in terms of how media elements can be used to influence perception and emotions. Encourages students to do comparative analyses of different types of mass media communications to discover relevant cultural elements and the principles underlying their uses.

AAS 425 Liberation Struggles of the African Diaspora
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Focuses on the movements of people of African descent in search of freedom from colonialism, racial oppression, slavery, and apartheid. Uses a comparative approach to trace evolving programs and conceptions of the freedom struggle across generations and regions. Topics include the Haitian Revolution, the African-America civil rights movement, the South African anti-apartheid movement, and the anti-colonial movements of Africa and the Caribbean.

AAS 460 Black Women in United States History
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Examines the history of black women in the United States from the slave era through the reform movements that occurred after World War II. Focuses on the range of demands placed on black women during the Gilded and Progressive eras - the founding of the National Association of Colored Women in 1896, their participation in the women's suffrage movement, black struggles for liberation in the United States and in the African Diaspora, cultural movement, war, labor force participation, and health. Also explores black women's interaction with male-dominated groups and feminists from other racial and ethnic groups. Students will analyze black women as leaders, their leadership styles and the impact that they have made on constituents.

AAS 461 Special Topics
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
This research and reading seminar each semester explores a specific topic in African American Studies. Topics may include urbanization, women’s history, archeology, slavery, civil rights, labor, etc.

AAS 496 Community Internship
Credits: 1
Prerequisites: None
Corequisites: None
Type: TUT
Assigns to students a research project with a community-based organization, agency, or center. Much time is spent studying how the agency structures and disseminates its services. Provision for effective research enables the student to participate in the black community and observe the dynamics of community activities and the role of the black community in decision making in government and social agencies and in the development of cultural and economic activities.
AAS 497 Honors Seminar
Credits: 4
Prerequisites: None
Corequisites: None
Type: SEM
One-semester course; builds on AAS 363 and culminates in a research project in cooperation with a member of the department's faculty. The Honors Seminar is tutored at a level more advanced than in the B.A. major program. Students complete AAS 464 with an awareness of the discipline's history, its changing foci and relation to other disciplines, its great works and pivotal intellectual figures, and its important research tools and resources.

AAS 498 Senior Seminar: Research Project
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
One-semester course; builds on AAS 363 and culminates in a research project in cooperation with a member of the department's faculty. Students complete AAS 463 with an awareness of the discipline's history, its changing foci and relation to other disciplines, its great works and pivotal intellectual figures, and its important research tools and resources.

AAS 499 Independent Study
Credits: 1
Prerequisites: permission of instructor
Corequisites: None
Type: TUT
Students conduct research or a project under the supervision of a member of the department's faculty.

American Studies

AMS 100 Indian Image on Film
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces students to a variety of approaches that have been developed in American studies to assist understandings of how different people participate in this society and in the world. Also considers how experiences continue to shape present thinking and future possibilities.

AMS 107 Introduction to American Studies
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces students to a variety of approaches that have been developed in American studies to assist understandings of how different people participate in this society and in the world. Also considers how experiences continue to shape present thinking and future possibilities.

AMS 111 Contemporary Popular Music
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Outlines historical developments that helped formulate today's jazz and rock movements; emphasizes roots and foundations of the forms.

AMS 113 American Lives and Environments: Folklore and Social Groups
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC/SEM
Examines patterned stories, sayings, designs, and ways of living that have been created and are continuously being recreated by groups of people; also investigates historical and social meanings of folklore.

AMS 114 American Lives and Environments: Folklore and Social Groups
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC/SEM
Examines patterned stories, sayings, designs, and ways of living that have been created and are continuously being recreated by groups of people; also investigates historical and social meanings of folklore.

AMS 128 Afro-Latin Musical Praxis
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Uses basic musical techniques derived from various Afro-Western traditions.

AMS 161 Natural World Perspective
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Discusses the fabricated image of Native Americans in American film history, the media process that perpetuates such images, and the resulting stereotypes; also covers the relationship to social movements and alternatives for overcoming stereotypes.

AMS 162 New World Imaginations
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Studies the connection with all forms of life in evolutionary development and ecological processes. Also examines ecstatic experiences; social life before the domestication of plants, animals, and each other; and utopian thinking.

AMS 167 Cross Cultural Topics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines patterned stories, sayings, designs, and ways of living that have been created and are continuously being recreated by groups of people; also investigates historical and social meanings of folklore.

AMS 179 Introduction to Native American History
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces the lives, histories, cultures, and characters of Native American peoples of North America. Focuses on cultural assumptions and native visions of the land, the environment, and the spirit life.

AMS 197 Seneca Language
Credits: 4
Prerequisites: None
Corequisites: None
Type: LEC
Seneca is an unwritten language. The course presents the basic Seneca vocabulary for numerals, foods, geological features, the classification of society, and the classification of nature, and works up to reading myths and legends.

AMS 198 Language of the Seneca I
Credits: 4
Prerequisites: None
Corequisites: None
Type: LEC
Introductory course; concentrates on the Seneca language by reciting some Iroquoian speeches.

AMS 209 Musics of the World
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces ethnomusicology; studies musical styles in a variety of cultures.

AMS 210 Musics of the World
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces ethnomusicology; studies musical styles in a variety of cultures.

AMS 231 Survey of Native American History
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Focuses on the spiritual side of the Native American; including substance, motivation, and character of the American Indian.

AMS 232 Survey of Native American History
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Focuses on the spiritual side of the Native American; including substance, motivation, and character of the American Indian.

AMS 272 Native American Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines perspectives and philosophies of Native American writers. Provides insight into why the American Indian has a unique perspective on caring for what happens to the Earth.

AMS 279 Contemporary Problems of American Indians
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Examines perspectives and philosophies of Native American writers. Provides insight into why the American Indian has a unique perspective on caring for what happens to the Earth.
AMS 281 Native Americans and the Colonist

Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Examines cultural interactions and values in collision during the major phase of the colonization of the Americas. Reviews contemporary texts in Native American history and culture in a seminar setting.

AMS 285 Natural World vs. Legal World

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines conflict between the natural world perspective of Native American culture and the legal world perspective of U.S. culture.

AMS 301 Introduction to Indigenous Women

Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Traces historical periods that affected Indigenous women's lives; emphasizes current laws and policies that have impacted their families and communities. SEM

AMS 306 Native American Aesthetics

Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Examines traditional and contemporary art methods and techniques by various Indigenous groups in North and South America.

AMS 343 Human Ecology

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies social dimensions of space affecting human distribution and location of social activities; provides theoretical explanations.

AMS 347 Seminar for Majors

Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Utilizes a common reading text and individually assigned textual readings plus occasional reports.

AMS 425 Native American Legal Situation

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Looks at the legal status of Native North Americans in relation to the United States and its governmental predecessors.

AMS 439 Contemporary American Fiction

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Considers problems in American fiction from a cultural, historical, thematic, and stylistic perspective.

AMS 440 Contemporary American Fiction

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Considers problems in American fiction from a cultural, historical, thematic, and stylistic perspective.

AMS 450 Contemporary American Urban History

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies urban development aspects in the local community and more generally.

AMS 457 Problems in American Urban History

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies urban development aspects in the local community and more generally.

AMS 488 Violence and Nonviolence

Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM/REC
Introduces the theory and practice of nonviolence.

AMS 499 Independent Study

Credits: 1
Prerequisites: Permission of instructor
Corequisites: None
Type: TUT
Undergraduate project.

ANA 113 Human Anatomy

Credits: 4
Prerequisites: None
Corequisites: None
Type: LEC/LAB
Comprehensive course focused on the gross anatomy and histology of human tissues and major organ systems. Designed for health sciences majors, this is a rigorous course emphasizing clinically relevant anatomy. Lectures are supplemented by a laboratory component consisting of demonstrations of cadaveric specimens.

ANA 407 Gross Human Anatomy

Credits: 6
Prerequisites: ANA 113 or APY 345/APY 346
Corequisites: None
Type: LEC/LAB
Eight-week course for students in exercise science and occupational therapy only. Laboratories involve dissection of the human cadaver, emphasizing the musculoskeletal system. Lectures emphasize clinical correlations.

ANA 495 Supervised Teaching

Credits: 1
Prerequisites: Permission of instructor
Corequisites: None
Type: TUT
Teaching assistant in anatomy courses.

ANA 499 Independent Study

Credits: 1
Prerequisites: Permission of faculty member and/or Vice-Chair
Corequisites: None
Type: TUT
Undergraduate project.

APY 104 Great Sites and Lost Tribes: The Romantic Element in Archaeology

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines the romantic element in archaeology in the great sites of the world, such as Troy, Olduvai Gorge, Stonehenge, and so forth. Since the sites cannot be separated from their discoverers and excavators, we also consider the lives of the most famous and romantic archaeologists, including Schliemann, Leakey, and Kenyon.

APY 105 Introduction to Anthropology

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introductory survey of anthropology's major subfields: archaeology, physical anthropology, and cultural anthropology.

APY 106 Introduction to Cultural Anthropology

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Surveys important ideas about culture and society that have shaped cultural anthropology. Studies the principal institutions of culture—language, social organization, religion, economics, politics, artistic expression, etc.—in their traditional ethnographic context and as they change through cultural contact and modernization.

APY 107 Introduction to Physical Anthropology

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
For centuries preceding modern times, our uniqueness as a species was taken as a sign of special creation; we were not seen to be a part of nature. But as knowledge of human evolution, our closeness to other primates, and our adaptations to specific environments emerged, we have taken our place in the animal kingdom. Here, we learn how those insights developed, and about current methods of understanding human origins and the natural forces that have shaped us.
APY 108 Introduction to Archaeology
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies the development of society from the earliest tools to the advent of history, analyzed in terms of spatial and temporal diversity, and as people's means of adapting to their environment.

APY 120 Environmental Anthropology
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
It is clear that our environment appears to not always be kind to us. Whether we are exposed to toxins produced by industry, harsh temperatures or malnutrition, the outcome is often poorer health and shorter life. As a biological/behavioral science, anthropology is in a unique position to explore and expand this knowledge area, and that is what this course covers.

APY 161 Heredity and Society
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Reviews the growth of the unique possibilities of historic archaeology - a growth that suggests that this subdiscipline can provide an important perspective on disciplinary goals, as well as on the history of North American societies.

APY 183 Peoples and Culture of Latin America
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
For non-majors. Modern Latin American nations; cultural history; current problems of national development; and future prospects.

APY 203 Anthropology and Film
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies culture through the use of visual materials (films, tapes, etc.). Emphasizes learning anthropological concepts, attitudes, and methodologies, with film as the primary medium for so doing. This is a class in anthropology, rather than a films course.

APY 205 American Norms and Deviations
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Points out ‘definitions of the situation’ that exclude and oppress some Americans for the apparent benefit of other Americans; explores categories of people (‘criminals’, ‘junkies’, ‘bums’, ‘drunks’, and so forth) as realities and as stereotypes, and analyzes their origins in American social history; also clarifies forces that sustain such categorizing.

APY 210 Musics of the World
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces ethnomusicology; considers musical styles in a variety of cultural contexts.

APY 215 Historic Archaeology
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Reviews the growth of the unique possibilities of historic archaeology - a growth that suggests that this subdiscipline can provide an important perspective on disciplinary goals, as well as on the history of North American societies.

APY 217 Warfare
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Intended for students who are interested in learning about the forms of armed combat, which occur in small-scale societies, and the causes of such violence. Focuses upon the ‘warfare’ of five different societies, and then explores several anthropological theories that address the causes and effects of internal violence and warfare.

APY 218 Men, Women and War
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Focuses on the experiences of men and women in war, both as members of military organizations and as noncombatants. Students learn (1) how military ranks are inculcated into a population, particularly the youth; (2) what it is like to be a member of a military organization, (3) about the activities of military organizations in combat, in the treatment of captured enemy, and in peace; and (4) what it is like to be a member of a society at war.

APY 226 Human Adaptation
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines human subsistence and reproductive behavior from an evolutionary perspective. The course consists of five sections: (1) the theory of evolution, natural selection, and adaptation; (2) what our nearest relatives, the two chimpanzee species, can teach us about being human; (3) recent human evolutionary history in the Pliocene and Pleistocene periods; (4) hunter-gatherers; and (5) special issues related to reproduction.

APY 239 Archaeology of New York Colonial History
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Covers the archaeology of New York State, from the first human settlement to the nineteenth century.

APY 245 Survey of the Primates
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces the field of primatology, including primate taxonomy, ecology, and evolution. Uses a variety of visual aids. Encourages primate biology, and visits to the Buffalo Zoo and the Physical Anthropology Laboratory.

APY 246 Introduction to Primate Behavior
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Behavior, and social organization of non-human primates: current theories, evolutionary processes, and research methods, both in the field and in the laboratories.

APY 248 Human Genetics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines contemporary human genetics relevant to families and society, including genetic diseases, family planning and demography, genetic counseling and prenatal diagnosis, genetic engineering, and genetics and the law.

APY 250 Topics in Archaeology
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Topics vary. May be taken more than once for credit.

APY 253 Special Topics in Archaeology
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Course content varies by instructor.

APY 261 Topics in Cultural Anthropology
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Topics vary. May be taken more than once for credit.

APY 262 Anthropology and Justice
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines comparative studies of justice from the perspectives of local and global human problems, including analyses of the causes of conflict and dispute: inequality, poverty, racism, war and aggression, colonialism, sexism, economic exploitation, and so forth. Considers justice in the context of related cultural concepts and values (such as truth and harmony) and in a variety of institutional settings (such as the community, workplace, and nation). In addition, the course investigates aspects of crime, deviance, punishment and rehabilitation, and restitution.

APY 265 People of South East Asia
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines the history and culture of both mainland and island Southeast Asia, emphasizing kinship, religion, and political systems, as well as art forms.

APY 275 Introduction to Medical Anthropology
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Uses an ecological and cultural perspective to study human disease, stress, and adaptation. Topics covered include the ecology and epidemiology of disease; genetic, physiological, and cultural adaptation; nutrition; stress; culture change; and health repercussions of economic development and modernization. While the course is more ecological than ethnomedical, there are supplementary readings and films on ethnomedical use of hallucinogens and altered states of consciousness, as well as cooperation between indigenous healers and biomedically trained personnel.
and is conducted in January, before this course lasts approximately two weeks. Students meet and discuss recent investigations and are exposed to 3D modeling and digital manufacturing techniques such as CNC, laser cutting and stereolithography printing. Assignments focus on technical problem solving and understanding material capabilities. Students learn technical drawing, scaled model building, semi-precise metal working, jig/fixture design and rubber molding. This course provides a conceptual basis for understanding 3D digital production methods.

APY 330 Prehistory of Europe
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
An undergraduate technical elective focusing on methods of 3D precision production. Through a series of assignments and site visits to commercial production facilities students are familiarized with the language of industrial production. Students are exposed to 3D modeling and digital manufacturing techniques such as CNC, laser cutting and stereolithography printing. Assignments focus on technical problem solving and understanding material capabilities. Students learn technical drawing, scaled model building, semi-precise metal working, jig/fixture design and rubber molding. This course provides a conceptual basis for understanding 3D digital production methods.

APY 331 Culture and Personality
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Involves field exploration of some of the most important cities of the ancient Maya, together with the instructor, students visit the vast and mysterious ruins of ancient Maya: Tikal, Iximche (Guatemala), Copan (Honduras), Tulum, Cobá, Chichén Itzá, Uxmal, Labná, Kabáh, Sayil, Dzibilchaltún and Edzná (Mexico). Students meet and discuss recent investigations at these sites with Mexican and North American archaeologists who work in the Maya area. Important museums in Guatemala and Mérida are also visited, along with contemporary Maya communities. The overseas portion of this course lasts approximately two weeks and is conducted in January, before the beginning of spring semester.

APY 332 Archaeology of New World
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines prehistoric development of Indian cultures in North and South America, from the initial aboriginal occupation of the Americas.

APY 333 Archaeology of the American Southwest
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
The American Southwest, a striking arid land, is rich in archaeological remains of mammoth hunters, cave dwellers, and Pueblo Indians. Reviews the evidence concerning those ancient people and their migrations, invasions, droughts, and abandonment. Also discusses field and laboratory techniques.
APY 333 North American Archaeology

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies the peopling of the continent, landscape evolution, origins and spread of agriculture, and the rise of chiefly forms of social organization. Also examines Meso-American influences, and the effects of European conquest.

APY 338 Field Research Archaeology

Credits: 6
Prerequisites: permission of instructor
Corequisites: None
Type: LAB
Archaeological research participation; includes techniques of site survey and excavation.

APY 344 Animal Communication

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Surveys natural communication systems within the animal kingdom, including the structure, functions, development, and evolution of natural communication systems among both human and non-human animals.

APY 345 Comparative Primate Anatomy

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC/LAB
Studies descriptive and functional primate anatomy, with relevance to the origin and adaptation of groups within the order of primates.

APY 346 Dissections in Comparative Primate Anatomy

Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Covers basic primate gross anatomy learned by dissecting and making comparative observations of various species of primates.

APY 348 Forensic Anthropological Osteology

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC/LAB
Covers fundamentals of human skeletal anatomy through lecture, demonstration, and laboratory work. Considers procedures and applications in contemporary and historical human biology and in archaeology, stressing both technical approach and theoretical application. This lecture and laboratory course demonstrates the fundamentals of human skeletal biology and anatomy. Stresses procedures and applications used in evaluating archaeological and contemporaneous human populations. Considers forensic applications.

APY 350 Human Behavioral Ecology

Credits: 3
Prerequisites: introductory anthropology course; introductory biology course recommended
Corequisites: None
Type: LEC
Examines subsistence and social behaviors from an evolutionary perspective. Discusses how ecological variation patterns affect behavioral variability between and within human populations. The course appeals to students in human ecology, cultural anthropology, archaeology, primatology, and human paleontology.

APY 353 Old World Prehistory

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies the archaeology of Africa, Asia, and Europe, from the Paleolithic period through the appearance of the earliest civilizations.

APY 361 Anthropology of the Middle East

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines Middle Eastern society from a cultural perspective. Topics include kinship, gender, popular and orthodox Islam, nationalism, mass media, urbanization, and historical relations with the West.

APY 362 People and Culture of Japan

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines the development of Japanese culture patterns, their relationship to the Asian mainland, and changes of traditional patterns accompanying modernization.

APY 363 Cultural History of Oceania

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Involves an archaeological and ethnographic survey of Oceania, emphasizing Polynesia; also examines a critical review of trans-Pacific migration theories.

APY 364 Peoples of Eastern Asia

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Deals with the peoples of East and Southeast Asia (though not northeastern peoples such as the Japanese or Koreans). Focuses mainly on Southeast Asia, especially Malaysia, and on social structure, ecology, and literature.

APY 366 Peoples of Asia

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Provides students with an anthropological introduction to the early periods of Chinese and Indian civilizations through lectures, audiovisual materials, and discussion. Compares these cultures with the West in terms of religious ideas, archaeological materials, political forms, family systems, and basic values.

APY 367 Meso-American Archaeology

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines art, iconography, architectures, and archaeology of ancient Mexico, Guatemala, and Belize; also covers religious, political, and economic development from its beginning, around 2000 B.C.E., to its decapitation by the Spaniards in 1521.

APY 368 Theories in Archaeology

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines archaeological theory and methods; including the proper design of archaeological research projects, data analysis, and interpretation of results.

APY 369 Peoples and Cultures of Sub-Saharan Africa

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Explores cultures of hunting, pastoral, and agricultural societies, including history, social structure, political and economic systems, religion, and aesthetics. Also considers the impact of colonialism, industrialization, urbanism, and political independence upon African societies and cultures.

APY 371 African American Culture

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Analyzes societies and groups in the Western Hemisphere derived from Africa; covers transplanted and emergent institutions, religions and aesthetics, and the role of African Americans in broader regional and national societies in the Americas.

APY 372 Maritime Anthropology

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Investigates maritime orientations and adaptations in human societies past and present. We look at the symbolic, cognitive, technological, and ecological aspects of maritime orientations using materials from ethnography, archaeology, history, and literature.

APY 373 Indians of North America

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines native North American cultures, including contact history, impact of political relations with Euro-Americans, and contemporary realities. Also studies revitalization movements, pantribalism, and land claims actions.

APY 374 Anthropology and Health Careers

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Reviews anthropological concepts and methods for students preparing for community service careers and health professions; also applies anthropological methods to contemporary health concerns of North America.

APY 377 Magic, Witchcraft and Sorcery

Credits: 3
Prerequisites: junior/senior standing
Corequisites: None
Type: LEC
Understanding the nature of magic and the anthropology of sorcery and witchcraft beliefs around the world and throughout history offers insights into some fundamental aspects of human belief and behavior. Considers ‘primitive’ beliefs as representative of universal beliefs and as background to the course’s consideration of ‘occult’ interests and fears in contemporary America.
<table>
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<th>Course Title</th>
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<th>Corequisites</th>
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Notes:
- Prequisites: Indicate any required courses or knowledge before enrolling.
- Corequisites: Indicate any required courses or knowledge in addition to the prerequisites.
- Credits: Indicate the number of credits each course offers.
- Type: Indicates the type of course offering (LEC, SEM, TUT).

University at Buffalo
APY 417 Human Evolutionary Ecology II: Subsistence
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Examines human subsistence behavior from an evolutionary and ecological perspective. Discussion focuses on patterns of behavioral variability between and within human populations. Topics include issues of reciprocity, foraging theory, the sexual division of labor, and evolutionary economics. Designed for students interested in human ecology, cultural anthropology, archaeology, primatology, and human paleontology. Seminar is designed to be one of a sequence that includes APY 416, although students can take one seminar without having taken the other.

APY 420 Special Topics
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Course content varies by instructor.

APY 421 Special Topics
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Course content varies by instructor.

APY 427 Comparative Urbanism
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Considers the origin of the city, starting with Mesopotamia. Defines urban and civilization, examines the urban environment and compares the archaeological city to the modern city.

APY 429 Anthropology of Architecture
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Examines the material culture of eastern North America from 1620 to the present. Focuses on the house and its contents as a means by which the settlers of the North American continent adapted to their environment. Uses a developmental perspective to organize the materials.

APY 432 Peoples of the Arctic and Subarctic
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Anthropological survey of arctic and subarctic populations, primarily focusing on Canada and Alaska, with some comparative coverage of Greenland, Siberia, and the Lapps of northern Europe. Develops multidisciplinary models using ethnographic, historical, and epidemiological sources to analyze traditional patterns and contemporary changes in northern communities. A variety of ecological and cultural systems have emerged in the North since the period of contact and settlement by Europeans, and the course encourages students to compare contemporary analyses of national, regional, and ethnic differences and similarities.

APY 433 Archaeology of Eastern North America
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Traces the variety of Native American cultures developmentally and regionally from the earliest occupation through the early historic period.

APY 434 Approaches to Archaeology
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Surveys the literature to identify the strategies and techniques of gathering and analyzing information in archaeology.

APY 435 Archaeological Techniques
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Skills course emphasizing the use of photography and drawing, both in the field and in illustrating site reports. Intended primarily for students with an archaeological career orientation, the course deals with factors in the preparation of art manuscripts: draftsmanship, work on drawings, maps, and plans, including line work and photography. Also considers artifact drawing, and processes of printing and production.

APY 439 Laboratory Techniques in Archaeology
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Involves individual instruction and guidance in the study of artifacts through lab projects.

APY 440 History of Archaeology
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Examines the history of archaeology, beginning with its classical and European antecedents. Examines the major trends of seventeenth-through twentieth-century archaeology. Explores major archaeologists and sites, emphasizing the New World. Relates history of archaeology to history of science.

APY 441 Anthropological Demography
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Examines the development and demographic characteristics of human populations in the prehistoric and ethnographic record.

APY 442 Work Anthropology
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Work is important because it produces the goods and services that make our lives possible, including raising children, growing food, producing knowledge and meaning, and making things. Nothing we strive to understand is more important, and this is one of those areas of research that is intuitively understood by those we study. Considers how work output is measured, work as it relates to illness, physical work capacity, fertility, food, and behavior. Course format is mixed lecture, laboratory, and seminar.

APY 443 Advanced Physical Anthropology
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Topics vary. May be taken more than once for credit.

APY 448 Human Genetics/Legal and Ethical Issues
Credits: 3  
Prerequisites: APY 248 or permission of instructor  
Corequisites: None  
Type: SEM  
Recent advances in genetic technology have presented the scientific and lay communities with ethical and legal problems yet to be resolved. Provides an opportunity for informed discussions of such issues relating to contemporary human/medical genetics.

APY 449 Mayan Civilization: Past and Present
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Explores Mayan civilization from its earliest beginnings to the current situation. The seminar begins with the pre-classic roots of Mayan civilization, then moves through classic splendor, post-classic turbulence, the European invasion, and into the current period of rebellion and ethnic resurgence. Students select a particular geographically and linguistically distinctive Mayan population and trace the group historically through artifacts, written records, life histories, and ethnographies. Student activities include active class participation in discussions and preparation of an annotated bibliography on a key aspect of Mayan civilization.

APY 457 Evolutionary Biology of Humans
Credits: 3  
Prerequisites: one course with substantial evolutionary biology content  
Corequisites: None  
Type: LEC  
Explores the application of evolutionary theory and method to modern human populations. Among the topics are heritability of biological and behavioral variables, developmental biology and natural selection, biological distance, biogeography and race, adaptive theory, adaptation to environmental change, and such emergent problems as crowding, hunger, epidemic disease, and global warming. Specific topics may vary depending on developments within the profession.

APY 474 Urban Anthropology
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Analyzes urban communities in cross-cultural perspective, the role of cities in large social cultural systems, utility of anthropological techniques in understanding complex communities, and contemporary American urban adaptations and research.

APY 475 Ecology and Cultural Adaptation
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Introduces ecological anthropology or cultural ecology. Examines interrelations of social and cultural systems with the biotic and physical environment, including exploitative and subsistence systems (such as land use, land tenure, and settlement patterns).
incest taboo, gender, clans, lineages, and including plural marriage, divorce, the human quality of kinship patterns, and the role of kinship in society and the family. This anthropological perspective draws attention to the many diverse components of health care in the United States, from high-tech advanced medical science to faith healing.

APY 477 Topics in Medical Anthropology

Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Processes that control the abundance and distribution of organisms in their natural environments; emphasizing population, community, and evolutionary ecology.

APY 480 Collapse of Civilization

Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Examines the production, distribution, exchange, and consumption systems of non-Western peoples; the integration of economic systems with other aspects of culture; and problems of underdeveloped areas.

APY 492 Political Anthropology

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Considers systems of government and control in the non-Western world, emphasizing tribal organization. Focuses on law and warfare, the two most important political functions or tasks engaged in by a political community.

APY 494 Senior Seminar

Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Topics vary. Seniors have registration priority.

APY 496 Internship

Credits: 1
Prerequisites: Permission of Instructor
Corequisites: None
Type: TUT
Students wishing to complete an internship with a host agency may register for this course with the agreement of the agency supervisor and the faculty advisor.

APY 499 Independent Study and Research

Credits: 1
Prerequisites: permission of instructor
Corequisites: None
Type: SEM/TUT
Individually designed program of reading, research, or skills development in close association with an instructor.

Architecture and Planning

AP 100 College Physics

Credits: 4
Prerequisites: MTH 121
Corequisites: None
Type: LEC/REC
Cross-listed with PHY 101 College Physics. Students must complete MTH 121 Survey of Calculus I prior to enrollment in AP 100. Open to School of Architecture and Planning students only.

ARC 101 Architectural Design Studio 1

Credits: 6
Prerequisites: architecture majors only
Corequisites: None
Type: LAB/LEC
Theme is communications and critical processes. Introduces two-dimensional and three-dimensional representation techniques for developing and presenting design concepts. Develops creative thinking and critical awareness in design. Cognitive understanding for spatial relationships present in structural, proportional, and site systems are introduced, combining geometry and graphics. Freehand drawings, 2-D and 3-D projections, shades, shadows, perspective, and reproduction techniques. Development of model-making skills utilizing various design media. Studio projects introduce a range of assignments for the making of both 2-D and 3-D environments. Introduces drawing and making as a mode of seeing and thinking.

ARC 102 Architectural Design Studio 2

Credits: 6
Prerequisites: architecture majors only
Corequisites: None
Type: LAB
Theme is process plus materiality, graphic communications, and visual representation. Provides a working forum for developing creative thinking and critical awareness in design. Further examines two-dimensional and three-dimensional representation techniques for developing and presenting design concepts. Cognition for spatial relationships present in structural, proportional, and site systems are acquired via freehand drawings, 2-D and 3-D projections, shades, shadows, perspective, and design techniques. Further enhancement of model-making skills utilizing various design media. Advanced emphasis of 2-D and 3-D projections, shades, shadows, perspectives, and reproduction techniques. Studio projects introduce a range of assignments for the making of both 2-D and 3-D environments.

ARC 121 Introduction to Architecture 1

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Provides a view and understanding of the profession and the discipline of architecture. Introduces architectural education and practice in the United States. Architecture responds to the past, embodied in the stones of the built environment, and is a fundamental aspect of the present. Connects architecture history and theory in an effort to show why architecture has been called ‘the handwriting of humankind.’ Examines architecture as a way of viewing the constructed world in the context of a liberal arts education as a study of aesthetic, technological, behavioral, social, environmental, physical, and legal forces determining architectural forms, landscapes, and urban patterns. Open to non-majors.

ARC 122 Environment, Behavior, and Design

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines contemporary perspectives on environmental psychology, focusing on the relationships between human behavior and designed environments, then psychology of design, and explores implications of those relationships for the purpose, nature, and future direction of design education, design research, and design practice. Open to non-majors.

ARC 201 Architectural Design Studio 3

Credits: 6
Prerequisites: ARC 101, ARC 102
Corequisites: None
Type: LAB
Theme is architectural history and precedent. Emphasizes conceptualization, critical thinking, planning, and making. Analyzes the basic materials, methods, tools, and conventions of architectural design. Examines the connections between design precedent and the physical and visual environments. Project themes include transformation, connection, threshold, movement/storage, surface/structure, accessibility, and transition.

ARC 202 Architectural Design Studio 4

Credits: 6
Prerequisites: ARC 101, ARC 102
Corequisites: None
Type: LAB
Theme is architectural history and precedent. Emphasizes conceptualization, critical thinking, planning, and making. Analyzes the basic materials, methods, tools, and conventions of architectural design. Examines the connections between design precedent and the physical and visual environments. Project themes include transformation, connection, threshold, movement/storage, surface/structure, accessibility, and transition.
ARC 211 American Diversity and Design
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines the history and diversity of cultural experiences within the United States and their attendant environmental issues. Specifically, the course concentrates on the ways in which our physical and media environments affect various populations in the U.S. and, in turn, the ways these populations have affected our environments. It introduces students to eight issues of U.S. diversity: race, ethnicity, gender, class, age, physical ability, cognitive ability, and religion. Writings, films, products, graphics, electronic media, buildings, and environments by and about diverse U.S. individuals and groups are examined. The U.S. history of our diverse physical and media environments are analyzed using theories and principles related to inclusive design. Open to non-majors.

ARC 231 Architecture History I: Ancient – 1450
Credits: 4
Prerequisites: architecture major/minor only
Corequisites: None
Type: LEC/REC
Introduces the development of urban and architectural form in a cultural context from the first settlements of Neolithic times to the consolidation of architecture as a discipline in the 1450s.

ARC 234 Architecture History II: 1450 – Present
Credits: 4
Prerequisites: ARC 231 and architecture major/minor only
Corequisites: None
Type: LEC/REC
Introduces the fundamentals of architectural design from the theory and practice of the 1450’s to the built and written manifestos of modern times. Situates the evolution of the architectural discipline within the context of social, cognitive and technological transformation.

ARC 241 Introduction to Building Technology
Credits: 3
Prerequisites: MTH 121 and architecture major/minor only
Corequisites: None
Type: LEC
Overview of integrated building systems exploring the interrelationships of construction technology, structures, and environmental controls systems, as they relate to building design.

ARC 280 Buffalo Niagara by Design
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Cross-listed with PD 279 Buffalo Niagara by Design. Explores the planning and design history of the Buffalo Niagara region in relation to the future. Examines proposals aimed at revitalizing the economy, improving the quality of life, and protecting the environment of Buffalo Niagara for future generations. Involves historical plus current plans and designs accompanied with lectures, discussions, films, and readings. Introduces urban design and regional development theory and practice. Provides an opportunity to understand community design, the full scope of small to large scale regional work, and comprehend location of place in relationship to the Buffalo Niagara region. Researches the history of Buffalo Niagara communities, examine the place as planned, and critically interpret its history, plans, and designs. Open to non-majors.

ARC 301 Architectural Design Studio 5
Credits: 6
Prerequisites: ARC 201, ARC 202
Corequisites: None
Type: LAB/REC
Theme is systems and subjectivity. Synthesizes design fundamentals with architectural design. Includes the theme of transformation to convert various aspects of architectural design-form, spatiality, materiality, structure, construction, use, site conditions, context, aesthetics, zoning, codes, accessibility, and cultural conditions.

ARC 302 Architectural Design Studio 6
Credits: 6
Prerequisites: ARC 301
Corequisites: None
Type: LAB/REC
Theme is models, organizations, and environments. Synthesizes design fundamentals with architectural design. Uses organization and environment to convert various aspects of architectural design-form, precedent, spatiality, systems, preparation, use, context, aesthetics, construction, collaboration, and human behavior.

ARC 311 Architectural Communications I
Credits: 4
Prerequisites: architecture majors only
Corequisites: None
Type: LAB/REC
2-D and 3-D representation techniques for developing and presenting design concepts. Freehand drawings, 2-D and 3-D projections, shades, shadows, perspective, and reproduction techniques. Utilizes various media. May be offered on an intermittent basis.

ARC 312 Architectural Communications II
Credits: 3
Prerequisites: ARC 311 and architecture majors only
Corequisites: None
Type: LAB
Three-dimensional drawings as tools for design development and presentation. Development of model-making skills. May be offered on an intermittent basis.

ARC 318 Design Methods
Credits: 3
Prerequisites: senior architecture majors only
Corequisites: None
Type: LEC
Topics vary annually. Past topics addressed issues in architecture, design, and production, using drawing and making as a mode of seeing and thinking. May be offered on an intermittent basis.

ARC 322 Introduction to Building Reuse
Credits: 3
Prerequisites: ARC 241 and architecture major/minor only
Corequisites: None
Type: LEC
Topics vary annually. Past topics examined case studies of past uses, present conditions, and future functional and structural possibilities of older buildings. Analyzes opportunities for adaptive reuse. Discusses development of design concepts and space-use programs, including renovation, restoration, and reconditioning, as well as preservation. May be offered on an intermittent basis.

ARC 325 History of Design
Credits: 3
Prerequisites: ARC 211 and architecture major/minor only
Corequisites: None
Type: LEC
A topical introduction to the history of design, examining architecture, communication design, industrial design, landscape design, and urban design. Contemporary debates in design theory form the basis for exploring the underpinnings of design production in present and past situations. May be offered on an intermittent basis.

ARC 342 Historic Preservation
Credits: 3
Prerequisites: ARC 121 or ARC 234, and upper-class architecture major/minor only
Corequisites: None
Type: LEC
Historic preservation theory as related to architectural design, emphasizing preservation practice, including tools of effective preservation, legislation, community roles, economics, adaptive reuse, and project management.

ARC 344 Building Systems Technology I
Credits: 3
Prerequisites: ARC 202 and architecture major/minor only
Corequisites: None
Type: LAB
Topics vary annually. Past topics detailed studies of design/build and existing systems available to meet needs of the built environment. Studied future possibilities of systems that meet the demands of a rapidly changing environment. Surveyed historical evolution of building systems, while emphasizing methodology of development and implementation. May be offered on an intermittent basis.

ARC 345 Building Systems Technology II
Credits: 3
Prerequisites: ARC 343 and architecture major/minor only
Corequisites: None
Type: LEC
Topics vary annually. Past topics investigated current design/build practices, especially those of practitioners in the northern US and Canada. Examined building system research, first hand case study investigation, materials exploration, system prototyping, planning and design, project administration, and construction. May be offered on an intermittent basis.
ARCs 352 Structures I
Credits: 3
Prerequisites: MTH 121, ARC 241, PHY 101, and architecture major/minor only
Corequisites: None
Type: LEC/LAB
Introduces the fundamentals of statics and strength of materials. Provides a theoretical and scientific basis for understanding how various structural systems and structural materials work and withstand loading. Investigates the concepts introduced during the course with qualitative methods, as well as quantitative analysis. The course's scope is limited to examining simple structural elements, such as trusses, beams, and columns.

ARCs 354 Experimental Structures
Credits: 3
Prerequisites: ARC 352 and architecture major/minor only
Corequisites: None
Type: LAB/SEM
Topics vary annually. Past topics included dimensional analysis, intersections of urban structure and metropolitan infrastructures, models, design prototypes, systems of forces and mass, structural materials, and contemporary theories. Reviewed experimental elements within three-dimensional structural systems for constructed environments. Discussed physical and immaterial structure, and studied stability of structural system elements within urban and built environments. May be offered on an intermittent basis.

ARCs 357 Fabric Structures
Credits: 3
Prerequisites: ARC 352 and architecture major/minor only
Corequisites: None
Type: LAB/LEC
Topics vary annually. Past topics reviewed theory and practice of building with stressed fabric membranes, and explored principles of cable structures, nets, tension membranes, and air-supported and inflated membranes. Also examined minimal surfaces, curved surfaces, materials, joints, and details along with design development, production, erection, and performance in use. May be offered on an intermittent basis.

ARCs 362 Performance Programming
Credits: 2
Prerequisites: architecture major/minor only
Corequisites: ARC 403 or permission of advisement
Type: SEM
Overview of architectural space programming process and approaches. Examines the performance concept applied to building design, using human factors as a basis for developing building programs. Introduces research methods used in pre-design activities and post-occupancy evaluation.

ARCs 403 Architectural Design Studio 7
Credits: 6
Prerequisites: ARC 301, ARC 302
Corequisites: ARC 362
Type: LAB
Theme is comprehensive design. Uses comprehensive architectural projects to address the complexity of the discipline – site conditions, construction technology, programming, research methods, life safety and accessibility, codes and standards, building systems, representation, documentation, and comprehensive design. Examines the values and ideologies architects bring forward in their work.

ARCs 404 Architectural Design Studio 8
Credits: 6
Prerequisites: ARC 403
Corequisites: None
Type: LAB
Theme is advanced topics in architecture and design. Uses comprehensive architectural projects to address the complexity of the discipline – site conditions, construction technology, programming, safety and accessibility, codes and standards, and representation. Examines the values and ideologies that architects bring forward in their work.

ARCs 406 Architectural Design Studio Abroad
Credits: 6
Prerequisites: ARC 301, ARC 302
Corequisites: None
Type: LAB
Locations vary annually. In the past, undergraduate students have participated in architecture design studios taught in Belgium, Costa Rica, Denmark, Germany, Ireland, Japan, and other international locations as organized by the Department of Architecture. Other in-house study abroad programs will be offered on an ad-hoc basis by the Department of Architecture, based upon faculty and student interest.

ARCs 411 CAAD 1: Introduction to CAAD
Credits: 4
Prerequisites: ARC 202, junior/senior standing and architecture major only
Corequisites: None
Type: LAB/Lab
Introduces students to fundamental theoretical concepts and current research themes in computing and design, as well as their practical application in electronic publishing, drafting, modeling, and design.

ARCs 412 CAAD 2: Models, Objects, & Environment
Credits: 3
Prerequisites: ARC 411, junior/senior standing, and architecture major only
Corequisites: None
Type: LAB/LAB
Introduces advanced concepts and current research trends in computer-aided design, rendering, animation, and advanced virtual-reality Web publishing. Addresses ways in which advanced computer techniques can be used in support of architectural design and presentation. May be offered on an intermittent basis.

ARCs 419 Contemporary Theory
Credits: 3
Prerequisites: ARC 234 and architecture major/minor
Corequisites: None
Type: SEM
Examines trends in design, contemporary theory, and criticism in art and architecture. May be offered on an intermittent basis.

ARCs 426 Color Culture Theory
Credits: 3
Prerequisites: ARC 211 and architecture major only
Corequisites: None
Type: LEC
Examines recent approaches to the study of color in relation to space, surface, and representation through the lenses of expanding and overlapping practices. Students study color in painting, literature, film, consumer media, installation and architecture to develop an understanding of its cultural impact. May be offered on an intermittent basis.

ARCs 435 American Architecture
Credits: 3
Prerequisites: ARC 121 or ARC 234 and architecture major/minor only
Corequisites: None
Type: LEC
Topics vary annually. An introduction to the history of American architecture with emphasis on American design topics. Historical and contemporary review for exploring the under-pinnings of American architecture in past and present situations. May be offered on an intermittent basis.

ARCs 439 Computer Modeling
Credits: 3
Prerequisites: ARC 411, junior/senior standing, and architecture major only
Corequisites: None
Type: LEC
Topics vary annually. Past topics examined theoretical and practical approaches of computing technologies in the design process through CAAD systems, drafting, graphic modeling, and rendering, with particular emphasis on architecture. May be offered on an intermittent basis.

ARCs 440 Computer Applications
Credits: 3
Prerequisites: ARC 411, junior/senior standing, and architecture major only
Corequisites: None
Type: LAB
Topics vary annually. Past topics introduced students to theoretical computing applications used for design, including theory of design evaluation, prediction, and generation. Investigated emerging techniques related to computer assisted design environments. Explored computing relational geometries in spatial and constructional systems.

ARCs 442 Construction Technology
Credits: 4
Prerequisites: ARC 301 and architecture major only
Corequisites: None
Type: LAB/LEC
A structures/construction course. Emphasizes details of construction. Examines interfaces of materials and systems: foundation/wall, wall/window, wall/roof, floor/window, etc. Investigates the effect of materials and processes on appearance and life of building components. Studies interior and exterior finishes, joints, fire protection, and specification.

ARCs 448 Building Projects
Credits: 3
Prerequisites: ARC 202 and architecture major/minor only
Corequisites: None
Type: LAB
Topics vary annually. Past topics examined design/build projects as a complex system of enterprises producing built facilities and altering environments. Included field trips, hands-on steel fabrication and erection, concrete demolition, concrete pours, pattern making, painting, landscaping, stone setting, as well as shop drawings. May be offered on an intermittent basis.

ARCs 449 Architectural Materials
Credits: 3
Prerequisites: ARC 202 and architecture major only
Corequisites: None
Type: LAB
Topics vary annually. In the past, observed and quantitatively and/or qualitatively predicted the behavior of materials: metals, polymers, ceramics, glass, wood, composites, paints, and preservatives. Explored and challenged the properties, social context, and methods of fabrication for the most common materials found in architecture. May be offered on an intermittent basis.
ARC 453 Structures 2
Credits: 3
Prerequisites: ARC 352 and architecture major/minor only
Corequisites: None
Type: LEC/LAB
Concentrates on the study and investigation of various structural materials, connections and details. Students study various design criteria for specific materials, such as timber, steel, and concrete, and are introduced to the proper use of various building codes in the structural design process.

ARC 455 Structures 3
Credits: 3
Prerequisites: ARC 453 and architecture major/minor only
Corequisites: None
Type: LEC
 Begins by emphasizing the investigation of reinforced concrete structures and continues by studying various types of foundation systems, such as footings, and retaining and bearing walls. Also includes a general overview of indeterminate structures and the behavior of continuous beams. Concludes with the study of lateral forces and dynamic loading, and their impact on the design of seismic and wind-resistant structures. May be offered on an intermittent basis.

ARC 456 Structures 4
Credits: 3
Prerequisites: ARC 455 and architecture major only
Corequisites: None
Type: LEC
Topics vary annually. Past topics examined systems in large and/or tall structures affecting decisions of architecture in relation to lightweight systems, physical constraints of the materials, manufacture of the material, and geometry in the material distribution. Reviewed stability considerations of structural systems and individual elements, as well as reserve strength and redundancy concepts. May be offered on an intermittent basis.

ARC 463 Design for the Life Span
Credits: 3
Prerequisites: architecture major only
Corequisites: None
Type: SEM
Overview of major goals and approaches for design and planning for life-span needs, with special attention to older and disabled individuals. Students pursue selected research projects or work together on a class project. May be offered on an intermittent basis.

ARC 464 Behavior and Space
Credits: 3
Prerequisites: ARC 362, architecture major/minor only
Corequisites: None
Type: SEM
Topics vary annually. Role of social and cultural theory in understanding design and physical environments. Impact of buildings and designed environments on human behavior, and behavioral issues within the design process. Effects of social and cultural factors on development, implementation, and use of research information in design. Explores contributions architects, urban planners, and landscape architects make to the design discourse. May be offered on an intermittent basis.

ARC 465 Urban Planning and Design 1
Credits: 3
Prerequisites: architecture major only or permission by advisement
Corequisites: None
Type: LEC
Explores the current practice of urban design in the context of the United States. Examines new opportunities and constraints in environmental assessment, and management structure in local government; mechanisms for land-use controls or incentives; public investment strategy; and case studies assessing major development strategies used in today's practice. May be offered on an intermittent basis.

ARC 467 Research Practice
Credits: 1
Prerequisites: architecture major/minor only
Corequisites: None
Type: TUT
Past activities involved analysis and development of real problems accepted from various sponsors. The student's specific contribution to the research findings must be documented and filed with the department and sponsor. May be offered on an intermittent basis.

ARC 470 Climate and Architecture
Credits: 3
Prerequisites: ARC 241 and architecture major/minor only
Corequisites: None
Type: LEC
Introduces the discipline and criteria of landscape design. The art of site planning, including analysis in relation to physical factors, such as topography, soil structure, climate, and behavior. The ecological basis for site planning and use of vegetation. May be offered on an intermittent basis.

ARC 471 Environmental Controls 1
Credits: 3
Prerequisites: ARC 41 and architecture major/minor only
Corequisites: None
Type: LEC
Examines the financial framework within which the building industry operates, and its impact on design decisions. Course developed analytical skills necessary to evaluate financial and economic viability of project proposals. Taught estimation of project development and operating costs, methods of finance, and market forces as components of feasibility studies. May be offered on an intermittent basis.

ARC 472 Energy and Shelter
Credits: 3
Prerequisites: ARC 473 and architecture major only
Corequisites: None
Type: LEC
Investigates current techniques and strategies centered around climate-responsive, energy-conscious design. Emphasizes manual, handbook, and computer techniques to determine comfort conditions and performance of small, passively heated, cooled, daylit buildings. Provides usable information applicable to various stages of the design process.

ARC 473 Environmental Controls 2
Credits: 3
Prerequisites: ARC 241 and architecture major/minor only
Corequisites: None
Type: LEC
Active systems of climate control in buildings and their relation to energy management. Evaluation and selection of mechanical equipment systems, their cost implications, and effectiveness. Design considerations in integrating various systems. Introduces sanitation, fire protection, and vertical transportation systems.

ARC 474 Sustainable Design
Credits: 3
Prerequisites: ARC 45 and architecture major/minor only
Corequisites: None
Type: LEC
Examines the major theoretical paradigms of sustainable design and ecological imaginations. May be offered on an intermittent basis.

ARC 475 Environmental Controls 3
Credits: 3
Prerequisites: ARC 40 and architecture major/minor only
Corequisites: None
Type: LEC
Addresses issues, awareness, and understanding of climate as a determinant of urban design, site design, site/building interface, and building. Studies global scale climatic zones to general/regional zones. May be offered on an intermittent basis.

ARC 476 Landscape Design
Credits: 3
Prerequisites: ARC 241 and architecture major/minor only
Corequisites: None
Type: LEC
Introduces the discipline and criteria of landscape design. The art of site planning, including analysis in relation to physical factors, such as topography, soil structure, climate, and behavior. The ecological basis for site planning and use of vegetation. May be offered on an intermittent basis.

ARC 477 Sustainable Design
Credits: 3
Prerequisites: ARC 121 and architecture major/minor only
Corequisites: None
Type: SEM
Offers a working understanding of the issues inherent in the discourse of sustainability as it occurs in planning and design professions. Students explore the practical and theoretical relationships among urban form, democratic ideals, and ecological imaginations. May be offered on an intermittent basis.

ARC 481 Cost Analysis and Control
Credits: 3
Prerequisites: ARC 241 and architecture major/minor only
Corequisites: None
Type: LEC
Topics vary annually. Past topics examined the financial framework within which the building industry operates, and its impact on design decisions. Course developed analytical skills necessary to evaluate financial and economic viability of project proposals. Taught estimation of project development and operating costs, methods of finance, and market forces as components of feasibility studies. May be offered on an intermittent basis.

ARC 482 Professional Practice
Credits: 3
Prerequisites: ARC 241 and architecture major/minor only
Corequisites: None
Type: LEC
Phases of management involving architects from project inception to its realization. Office organization, contractor and owner management of projects, construction-cost analysis, organization and preparation of construction documents, review of related legal papers and standardized forms, alternative patterns of construction management relations. Emerging patterns of architectural practice.

ARC 488 Special Topics: Seminar in Design Theory
Credits: 3
Prerequisites: architecture major/minor or permission by advisement
Corequisites: None
Type: SEM
Topics vary annually. Past topics addressed issues in architecture and design theory. May be offered on an intermittent basis.
ARC 492 Special Topics
Credits: 1
Prerequisites: architecture major or permission of instructor
Corequisites: None
Type: LAB
Topics vary annually. May be offered on an intermittent basis.

ARC 493 Special Topics
Credits: 3
Prerequisites: architecture major or permission of instructor
Corequisites: None
Type: LEC/TUT
Topics vary annually. May be offered on an intermittent basis.

ARC 496 Community Design Service
Credits: 1
Prerequisites: architecture major or permission of instructor
Corequisites: None
Type: TUT
Matches students with community organizations in need of architecture-related services. Students do hands-on work serving community needs and pursue learning experiences with faculty. May be offered on an intermittent basis.

AP 496 Architecture and Urban Planning Practicum
Credits: 1
Prerequisites: None
Corequisites: None
Type: TUT
Allows students to gain exposure and experience with a host agency as well as increase their understanding in particular areas of architecture, environmental design, and urban planning. Advanced permission, agreement with the host agency, and a required final written report must be approved by School of Architecture and Planning Advisement.

ARC 498 Special Topics
Credits: 3
Prerequisites: architecture major or permission of instructor
Corequisites: None
Type: LAB
Topics vary annually. In the past this course addressed issues in architecture and design.

AP 499 Independent Study
Credits: 1
Prerequisites: None
Corequisites: None
Type: TUT
Designed to add depth and breadth to a student’s understanding of architecture or environmental design and urban planning. Students electing this course must be accepted for work on a specific topic by a member of the School of Architecture and Planning’s faculty, and must have the approval of School of Architecture and Planning Advisement.

ARC 499 Independent Study
Credits: 1
Prerequisites: architecture major/minor or permission of instructor
Corequisites: None
Type: TUT
Designed to add depth and breadth to a student’s formal degree program. Students electing this course must be accepted for work on a specific topic by a member of the architectural faculty, and must have the approval of the department chair. May be offered on an intermittent basis.

ART 105 Studio 1: Art & the Everyday
Credits: 3
Prerequisites: None
Corequisites: None
Type: LAB
Explores material culture, industrial/mass production, information media and design, craft, kitsch, and the banal through the concepts, processes and practices of two- and three-dimensional design and drawing. Required for first-year BFA and BA majors.

ART 110 Studio 2: Constructed Body
Credits: 3
Prerequisites: None
Corequisites: None
Type: LAB
Investigates concepts and processes of drawing, three-dimensional and performance methods as forms of expression used in exploring the history and function of the human body in art. Introduces students to related issues such as sexual politics, post-colonialism and technology, and contextualizing their projects within a larger cultural framework. Required for first-year BFA and BA majors.

ART 111 Drawing Fundamentals
Credits: 3
Prerequisites: None
Corequisites: None
Type: LAB
Involve drawing from still life, figure, and memory/imagination, utilizing a wide variety of media. Conceptual emphasis on line, gesture, shape, space, value, and texture. Covers compositional theory and development of visual expression.

ART 120 Studio 3: Public Space
Credits: 3
Prerequisites: None
Corequisites: None
Type: LAB
Investigates concepts and design processes related to three-dimensional investigations situated in the public domain. We contextualize assignments by studying the history and social impact of these practices of two- and three-dimensional drawing and design. Required for first-year BFA and BA majors.

ART 125 Studio 4: Self and Ritual
Credits: 3
Prerequisites: None
Corequisites: None
Type: LAB
Relates concepts and design processes to painting and printmaking, exploring the function of art through personal narratives, issues of identity, and as a vehicle for spiritual/psychological transformations.

ART 135 Studio 5: Time-based Strategies
Credits: 3
Prerequisites: None
Corequisites: None
Type: LAB
Investigates the concepts and practices of photography, computer art, and video as the basis for visual communication and expression in contemporary art and design. We ground assignments in the development of semiotics, media literacy, media ethics, dissemination techniques, and teamwork.

ART 202 Intro to Print Media: Relief and Letterpress
Credits: 3
Prerequisites: Accepted art major or permission of instructor
Corequisites: None
Type: LAB
Studio course utilizes methods of woodcut, linocut, letterpress, and digital letterpress (photopolymer plates) to introduce students to the historical conventions and contemporary extensions of relief printing. Explores the aesthetic possibilities of inking and impression, and seeks the pleasures of material involvement while building conceptual and technical knowledge. Culminates in an assignment that emphasizes the relationship between typography, language and meaning.

ART 205 Introduction to Print Media: Intaglio and Collagraph
Credits: 3
Prerequisites: accepted art major or permission of instructor
Corequisites: None
Type: LAB
Teaches the basics of intaglio (etching) and collagraph print media. Instruction in non-toxic methods is included along with traditional methods on copper and zinc plates. Analyzes historical and contemporary constructions of narrative and sequence, culminating in a project that builds upon this theme.

ART 207 Drawing Concepts 1
Credits: 3
Prerequisites: Accepted art major
Corequisites: None
Type: LAB
First semester of a two-semester sequence of drawing courses focusing on the language, materials and concepts of drawing as foundation for all the visual arts. Emphasizes the development of perceptual, analytical, and structural drawing skills while simultaneously working with idea development. Includes sketching as concept generation; material exploration; creating pictorial and illustrative space; recording the external world; and working with the figure. Line, texture, tone, shape, composition, light and shadow are covered along with a variety of wet and dry drawing media.
ART 208 Drawing Concepts 2  
Credits: 3  
Prerequisites: ART 207  
Corequisites: None  
Type: LAB  
Second semester of a two-semester sequence of drawing courses focusing on the language, materials and concepts of drawing as foundation for all the visual arts. Emphasizes idea generation as a formal and conceptual process, from the thought in the mind to the gesture on the page to a fully articulated image. Students investigate the translation that occurs when representing ideas through a variety of drawing tools, materials and mark making. Topics covered include narrative sequencing, mapping, and scale. Projects are structured to make visible the internal world of emotions, imagination, memory and opinion.

ART 216 Pictorial Structure  
Credits: 3  
Prerequisites: Accepted art major  
Corequisites: None  
Type: LAB  
Addresses the formal and conceptual aspects of 2D artwork. Art from the past and present is viewed, discussed, and utilized as a starting point for student-driven assignments. The nature of each assignment is based on the formal (visual) qualities of an idea paired with a conceptual (thematic) core. All student work is based upon and inspired by the ideas, theories, opinions, and reactions on art from a widely dispersed range of periods and regions.

ART 211 Basic Painting  
Credits: 3  
Prerequisites: Accepted art major  
Corequisites: None  
Type: LAB  
Covers basic methods and materials in oil painting; including traditional and current approaches to form, color, and pictorial organization. Varied course structure includes direct interpretation of subject matter, as well as conceptually based visual problems.

ART 212 Painting Processes  
Credits: 3  
Prerequisites: ART 211  
Corequisites: None  
Type: LAB  
Covers basic methods and materials in oil painting; including traditional and current approaches to form, color, and pictorial organization. Varied course structure includes direct interpretation of subject matter, as well as conceptually based visual problems.

ART 219 Sculpture: Methods of Spatial Inquiry  
Credits: 3  
Prerequisites: Accepted art major or permission of instructor  
Corequisites: None  
Type: LAB  
Paradigms of space, from map to model, shift radically from epoch to epoch. Reflecting these shifts, sculpture since Minimalism, has increasingly redefined its notion of 'form' and 'objectness' to include the surrounding perceptual space, temporal practices, and the socio-political constituents of space. Students are introduced to materials and methods of object/structure building, process and time based practices, and the relationship of sculpture to media and visual culture.

ART 221 Typography  
Credits: 3  
Prerequisites: Accepted art major  
Corequisites: None  
Type: LAB  
Introduces typographic history, type anatomy, type styles, application of legibility guidelines, and explorations with interpretive and experimental typography.

ART 223 Figure Drawing 1  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LAB  
Uncover the transient and internal in a series of sessions that refines memory, facilitates speed, hones powers of perception and expression, all inspired by nothing less than the eternal nude. Gesture, spirit, memory, motion, essence, speed, measure, pace, balance, focus, weight, gravity, rhythm are all filters through which we examine and express human form. Technical experimentation is essential.

ART 225 Introduction to Print Media: Lithography and Monotype  
Credits: 3  
Prerequisites: accepted art major or permission of instructor  
Corequisites: None  
Type: LAB  
Teaches the basics of lithography and monotype print media. Prized for its subtle effects and evocative surfaces, lithography is particularly well suited for artists who like to draw or use photographic/digital montage strategies to construct images. Often described as painterly printmaking, monotype may be combined with lithography and is adapted to print on a variety of surfaces with or without a press. Thematic focus is on cultivating visual memory and the imagination.

ART 229 Painting for Nonmajors 1  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LAB  
For students not singularly committed to becoming artists. We learn a basic approach to oil painting and experience a variety of visual points of view.

ART 231 Painting for Nonmajors 2  
Credits: 3  
Prerequisites: ART 231  
Corequisites: None  
Type: LAB  
For students not singularly committed to becoming artists. We learn a basic approach to oil painting and experience a variety of visual points of view.

ART 240 History of Visual Communication  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Survey of the history of visual communication from prehistoric times to the present. Examines synchronous and diachronic relationships between art, media, critical theory, semiotics, literature and culture. Midterm and a final independent research paper or presentation of a scholarly nature required.

ART 245 Introduction to Digital Practices  
Credits: 3  
Prerequisites: Accepted art major  
Corequisites: None  
Type: LAB  
A thematic approach to drawing; focuses on larger projects that combine a formal, material and conceptual approach to drawing. Students develop a personal language of drawing by researching, articulating and executing work through the interpretation of each theme. Themes vary from semester to semester. In addition to studio work, reading and lectures will correlate with each project contextualizing the theme within a historical and contemporary approach to art making. The class culminates with a self-determined, self-directed project.
ART 309 Digital Reproduction Processes
Credits: 3
Prerequisites: ART 221
Corequisites: None
Type: LAB

ART 311 Alternate Painting Strategies
Credits: 3
Prerequisites: ART 212 or permission of instructor
Corequisites: None
Type: LAB
Explores non-traditional materials, processes and pictorial articulation in addition to conventional variants. Stresses thematic content, theoretical form, color, and space based upon individual interpretation. Compositional approaches include the use of appropriated imagery, allegory, and conceptualizations.

ART 312 Individual Painting Explorations
Credits: 3
Prerequisites: ART 311
Corequisites: None
Type: LAB
Encourages individual creative research through a consistent exploration of themes, concepts, processes and media towards a cohesive body of work. This course also investigates a variety of possible ways for installation and exhibition.

ART 313 Photography: Image and Text
Credits: 3
Prerequisites: ART 210
Corequisites: None
Type: LAB
Explores photographic concepts and techniques beyond the basic level, including combination with other 2-D and 3-D media. Involves camera, darkroom, and applied techniques. Emphasizes conceptual problem solving, and includes a written component.

ART 314 Photography Extended
Credits: 3
Prerequisites: ART 210
Corequisites: None
Type: LAB
Explores photographic concepts and techniques beyond the basic level, including combination with other 2-D and 3-D media. Involves camera, darkroom, and applied techniques. Emphasizes conceptual problem solving, and includes a written component.

ART 315 Black and White Film Photography
Credits: 3
Prerequisites: ART 210 or permission of instructor
Corequisites: None
Type: LAB
Introduces students to the art and techniques of black and white film photography and its associated chemically-based darkroom techniques. Through shooting assignments and darkroom work, they learn first the use of this medium as a form of personal expression. Secondly, they learn the various technical means such as camera control, exposure, Zone System theory, developing, printing and specialized chemical processes to accomplish this.

ART 316 Cross Cultural Painting/Bricolage
Credits: 3
Semester: Spring
Prerequisites: ART 211 or ART 231 or ART 229
Corequisites: None
Type: LAB
Investigates themes, imagery, and processes re-contextualized through painting and bricolage, a construction from materials at hand. Requires experimentation with ideas, materials and processes inspired by non-Western cultures in addition to familiar cultural experiences. Lectures, projects, group critiques and individual instructions assist students to achieve creative objectives.

ART 319 Visual Semiotics and Rhetoric
Credits: 3
Prerequisites: ART 221, accepted as communication design major
Corequisites: None
Type: LAB
Involves theoretical, analytical, and practical exposure to visual semiotics, and rhetoric as used by the communication designer. Also, introduces information design and the development of theme and image. Emphasizes print media produced with digital tools.

ART 320 Design for New Media
Credits: 3
Prerequisites: ART 221, accepted as communication design major
Corequisites: None
Type: LAB
Introduces time-based visual communication with sound and motion, exploring interactive and non-interactive structures for persuading and informing.

ART 322 Design for Print and Electronic Media
Credits: 3
Prerequisites: ART 221, accepted as communication design major
Corequisites: None
Type: LAB
Hands-on exploration of the designer's role as author, visual editor, or art director of print and electronic publications: newsletter, newspaper, magazine, book, website, web site, etc. Review of historical and current publication media with a focus on purpose, formula and form.

ART 323 Figure Drawing 3
Credits: 3
Prerequisites: ART 223
Corequisites: None
Type: LAB
Building on the skills of figure drawing one; the focus is on the complex and compelling subject of drawing the human body. Students will work from the model, study the figure as a means to expand visual perception and refine drawing skills. Explores the body as an object of beauty and a metaphor for documenting the passion and the pathos of human experience. Introduces the landmarks of anatomical bone and muscle structure. Incorporates field trips to sites such as the Gross Anatomy Lab. Outside class, assignments will focus on the body as a means for expression, be it personal, social, political, narrative or emotional.

ART 324 Figure Drawing 4
Credits: 3
Prerequisites: ART 323
Corequisites: None
Type: LAB
Explores issues concerning the nude, the gaze and gender, pose and possession, scale and scandal as we contextualize and historicize the tradition of figure drawing. Cross-temporal and cross-cultural visual and written texts inform and inspire our own projects and practice.

ART 326 Lithography and/or Monotype Extended
Credits: 3
Prerequisites: ART 225 or permission of instructor
Corequisites: None
Type: LAB
Students build upon individual interests and talents in order to formulate, research, contextualize, and execute a body of work. Thematic focus changes each semester and provides new linkages to historical/theoretical contexts and extends material options. Students should have basic experience in one or more of the following print media: lithography, monotype, or digital (inkjet). Themes for each semester are announced on the print media course website.

ART 329 Intermediate Sculpture 1
Credits: 3
Prerequisites: ART 229
Corequisites: None
Type: LAB
Continuation of ART 229 directed primarily toward sculptural concepts.

ART 330 Intermediate Sculpture 2
Credits: 3
Prerequisites: ART 329
Corequisites: None
Type: LAB
Continuation of ART 229 directed primarily toward sculptural concepts.

ART 333 3D Precision Production Concepts
Credits: 3
Prerequisites: accepted art major or permission of instructor
Corequisites: None
Type: LAB
An undergraduate technical elective focusing on methods of 3D precision production. Through a series of assignments and site visits to commercial production facilities students are familiarized with the language of industrial production. Students are exposed to 3D modeling and digital manufacturing techniques such as CNC, laser cutting and stereolithography printing. Assignments focus on technical problem solving and understanding material capabilities. Students learn technical drawing, scaled model building, semi-precise metal working, jig/fixture design and rubber molding. This course provides a conceptual basis for understanding 3D digital production methods.

ART 337 Figure, Foundry and Casting
Credits: 3
Prerequisites: None
Corequisites: None
Type: LAB
Methods of figurative sculpting will be introduced in conjunction with traditional plaster and rubber mold making and lost wax bronze casting.

ART 340 Historic and Experimental Photo Techniques
Credits: 3
Prerequisites: ART 210
Corequisites: None
Type: LAB
Explores various alternative photographic techniques, such as cyanotype, gum, and platinum; also studies historic importance in the medium, and creative contemporary uses.
ART 341 Book Design  
Credits: 3  
Prerequisites: Accepted art major or permission of instructor  
Corequisites: None  
Type: LAB  
Examines professional practices of the book. Introduces publishing terminology and print production. Emphasizes development and articulation of the student’s conceptual and aesthetic concerns.

ART 353 View Camera  
Credits: 3  
Prerequisites: ART 210  
Corequisites: None  
Type: LAB  
Explores practical and chemical aspects, such as the view camera, silver photographic emulsions, developers, toners, special chemicals, archival processing, exposure, and zone-system theory.

ART 354 Studio Photography  
Credits: 3  
Prerequisites: ART 210  
Corequisites: None  
Type: LAB  
Examines photographic studio lighting for both black/white and color; artificial lighting (tungsten and photo studio strobes), studio setups, portraiture, and large-scale printing.

ART 356 Exploring Identity  
Credits: 3  
Prerequisites: ART 150  
Corequisites: None  
Type: LAB  
Studio course exploring the role of representation of identity in the issues regarding personal, cultural, ethnic, social, economic, sexual/biological, and gender identity. Investigates the expanding and changing function and form of the representation of “identity” tradition in contemporary art and, according to Foucault, how we “create ourselves as a work of art.”

ART 360 Photo Process Imagery  
Credits: 3  
Prerequisites: ART 210  
Corequisites: None  
Type: LAB  
Studies the physical medium as the chief vehicle for creative expression, including pinhole, manipulated negatives, and prints.

ART 361 Art and Research  
Credits: 3  
Prerequisites: Accepted art major or permission of instructor  
Corequisites: None  
Type: LAB  
Students experiment with different research methods as a means to generate, inspire, and inform projects. This course is process-oriented, content-driven, and is designed for students who want to develop greater conceptual depth in their art practices. It is recommended to students who want to begin preparing themselves for Senior Thesis.

ART 380 Algorithmic Art  
Credits: 3  
Prerequisites: ART 250, accepted art major  
Corequisites: None  
Type: LAB  
Explores computer graphics, the expressive and informative impact of real time and frame/cell animation; digital image synthesis; the dynamics of sound/image synthesis; and time-space structures’ application to computer animation.

ART 381 Computer Motion Imaging  
Credits: 3  
Prerequisites: ART 250, accepted art major  
Corequisites: None  
Type: LAB  
Explores with computer graphics, the expressive and informative impact of real time and frame/cell animation: pixilation; metamorphosis; interaction of synthesized actors with backgrounds; the dynamics of sound/image synthesis; and time-space structures’ application to computer animation.

ART 382 Computer Modeling and Simulation  
Credits: 3  
Prerequisites: ART 250, accepted art major  
Corequisites: None  
Type: LAB  
Explores, in a hands-on fashion, computer processes that construct, model, transform, and render simulated 3-D objects in virtual space. These objects are utilized either as exploration and development tools for actual 3-D sculpture for packaging, product, interior, and exhibit design, or in the creation of virtual sculpture or virtual art installations.

ART 383 Interactive Computer Art  
Credits: 3  
Prerequisites: ART 250, accepted art major  
Corequisites: None  
Type: LAB  
Studio course for creating experimental interactive computer productions for artist expression, and the presentation of knowledge in which participants observe and navigate in nonlinear directions and reconfigure media components for other users. Students are exposed to the work of theorists, artists, designers and technologists relevant to selected projects. The course explores new approaches that define an aesthetic within this emerging art form.

ART 385 Computer Image Synthesis  
Credits: 3  
Prerequisites: ART 250, accepted art major  
Corequisites: None  
Type: LAB  
Looks at the use of images in the digital age. Students work from a number of image sources, including printed images, photographic images, video, and computer-generated images. Explores the new imaging technology and tries to find pathways toward the development of an aesthetic discourse for the medium.

ART 387 Telematic Art and Design  
Credits: 3  
Prerequisites: ART 250, accepted art major  
Corequisites: None  
Type: LAB  
Explores with computer graphics, the expressive and informative impact of real time and frame/cell animation: pixilation; metamorphosis; interaction of synthesized actors with backgrounds; the dynamics of sound/image synthesis; and time-space structures’ application to computer animation.

ART 401 Professional Practices in Photography  
Credits: 3  
Prerequisites: ART 210  
Corequisites: None  
Type: LAB  
Introduces professional practices of the working photographer.

ART 402 Tactical Media  
Credits: 3  
Prerequisites: junior standing  
Corequisites: None  
Type: LAB  
An advanced undergraduate course in tactical media designed to bring artists from various specializations together to discuss methods and possibilities for independent public art activities, and to experiment with soft interventions in locations not typically accessed by artists. Pays particular attention to process (as opposed to product), to what can be created, organized, and/or produced outside of the artist’s studio, and to engaging the immediate and specific qualities of a given socio-phenomenological field.

ART 410 The Intersections of Design and Community  
Credits: 3  
Prerequisites: ART 309, ART 319, ART 320, or permission of instructor  
Corequisites: None  
Type: LAB  
Using a collaborative approach, students work for the semester on creative projects for local, not-for-profit organizations. Teams are responsible for concept development and design, schedules, budgets, production, printing, and client management. Entails design activities, interactive media, print, product design, packaging design, exhibition design, and design for public space. Students will visit participating organizations, print houses, and project related lectures.

ART 411 Advanced Painting  
Credits: 3  
Prerequisites: ART 312  
Corequisites: None  
Type: LAB  
Develops professional methods and strategies as they relate to theory, art history, practice and career development. Emphasizes students’ individual painting ideas and sensibilities through self-initiation and creative resolution of visual investigation.

ART 412 Advanced Painting  
Credits: 3  
Prerequisites: ART 411  
Corequisites: None  
Type: LAB  
Develops professional methods and strategies as they relate to theory, art history, practice and career development. Emphasizes students’ individual painting ideas and sensibilities through self-initiation and creative resolution of visual investigation.

ART 419 Identity Design  
Credits: 3  
Prerequisites: ART 221, accepted communication design major  
Corequisites: None  
Type: LAB  
Explores identity, image, and branding for non-profit and for-profit organizations, including product and service marks, stationery, packaging, 3D displays, exhibitions, and signage for identification and way-finding.

ART 422 Design Issues  
Credits: 3  
Prerequisites: ART 221, accepted communication design major  
Corequisites: None  
Type: LAB  
Involves research, lectures, guest speakers, videos interviews, readings, discussions, and presentations that investigate contemporary design issues and professional practices. Topics include design theory and criticism focusing on ethics and social responsibility, and design management within a wide range of professional practices.
ART 423 Figure Drawing 5
Credits: 3
Prerequisites: ART 324
Corequisites: None
Type: LAB
Explores the ways that representation and absence, ersatz eros, and the prurient present underlie the origins and continued allure of the figurative tradition. The scene is paramount in setting off the seen. Emphasizes the psychological and physical aspects of figured relationships and spaces that we portray in ambitious and subtle works that entice, revolt, and reclaim the viewers. Independent research and considerable out-of-class commitment bring in-class efforts to fruition.

ART 424 Figure Drawing 6
Credits: 3
Prerequisites: ART 423
Corequisites: None
Type: LAB
Explores the ways that representation and absence, ersatz eros and the prurient present underlie the origins and continued allure of the figurative tradition. The scene is paramount in setting off the seen. Emphasizes the psychological and physical aspects of figured relationships and spaces that we portray in ambitious and subtle works that entice, revolt, and reclaim the viewers. Independent research and considerable out-of-class commitment bring in-class efforts to fruition.

ART 426 Interactive Computer Art 2
Credits: 3
Prerequisites: ART 380 or ART 383 or permission of instructor
Corequisites: None
Type: LAB
Students create experimental interactive computer production to present knowledge and artistic expression, which participants observe, navigate in non-linear directions, and reorganize for other users.

ART 429 Advanced Sculpture - Studio Practice 1
Credits: 3
Prerequisites: ART 330
Corequisites: None
Type: LAB
Continuation of ART 329-ART 330. Develops an individual language and promotes extended exploration of media in sculpture.

ART 430 Advanced Sculpture - Studio Practice 2
Credits: 3
Prerequisites: ART 429
Corequisites: None
Type: LAB
Continuation of ART 329-ART 330. Develops an individual language and focus in sculpture. Also encourages extended exploration of and experimentation with personally relevant materials, media, and techniques.

ART 447 Studio Seminar
Credits: 3
Prerequisites: junior/senior standing in the fine arts, art history, or literature
Corequisites: None
Type: SEM
A combination of theory and practice involving a focused topic important to art. Assigned topics vary and are announced before preregistration. Requires the preparation of a visual or written work that addresses issues raised in the course.

ART 448 Studio Seminar in Photography
Credits: 3
Prerequisites: ART 210 or ART 213
Corequisites: None
Type: LAB
Combines theory and practice (studio components) involving a particular topic. Assigned topics vary each semester and are announced before preregistration. Includes lectures, critiques, readings, writing, discussions, demonstrations, darkroom sessions, and slide presentations.

ART 462 Installation: Urban Strategies
Credits: 3
Prerequisites: accepted art major or permission of instructor
Corequisites: None
Type: LAB
The focus of this course is on the exploration of spatial practice in any media, including time-based (e.g. sound, moving image, etc.) and the ephemeral (e.g. scent, light, air, etc.), and site-specificity in art. Studio assignments are integrated with theoretical research and analysis. A range of material and technical explorations will be made in relation to concept development. On and off-campus installation sites will be sought out, negotiated and utilized in the realization of student projects. Projects will range from material form in the dedicated and sheltered space of interiors and private environments, to the complex structures in the socio-cultural space of public exteriors and urban environments.

ART 476 Topics in Printmaking
Credits: 3
Prerequisites: ART 205, ART 225, ART 259, or permission of instructor
Corequisites: None
Type: LAB
Involves the research and production of a significant semester-long project or series. A thematic topic (which changes each semester and is announced on the print media website) serves as a springboard for focused readings and discussion. Includes professional preparation, guest artists, visits to collections, and demonstrations. Students may utilize any print media alone or in combination with other 2-D/3-D media (not all projects require prior printmaking experience).

ART 489 Real-Space Electronic Art
Credits: 3
Prerequisites: ART 380 or ART 383 or permission of instructor
Corequisites: None
Type: LAB
Enables students to create sophisticated, self-generated projects using interactive electronic technologies other than mouse, keyboard, and CRT monitor, such as micro-controllers. Involves hands-on explorations of applied electronic principles; selected readings and discussions; short exercises; and a final, self-directed project.

ART 494 F/S Senior Thesis Project I & II
Credits: 3
Prerequisites: Senior standing in art
Corequisites: None
Type: LAB
Involves preparation, research, proposal development, and initial studio exploration for a senior thesis project to be completed in a two-semester sequence. The advanced work expected is demonstrated by technical expertise, independent motivation, maturing personal interpretation and expression, and understanding one’s work in relation to current works by mature artists. Students can work in one or a combination of studio art media: computer, drawing, installation, film, paint, photography, print, sculpture, type, or video.

ART 496 Internship
Credits: 1
Prerequisites: Permission of Instructor
Corequisites: None
Type: TUT
Choose from the following:
- Arts Management Internship—Students are assigned to art galleries or other institutions within the university or the community to get hands-on experience as interns. May be repeated once in a different location.
- Communication Design Internship—An arranged experience within an agency and the printing industry familiarizes students with actual working conditions and considerations; students observe and participate in design for publication, mechanicals, and other facets of graphic arts production. May be repeated second semester.
- Photography Internship—Internship at an art gallery or with a commercial, portrait, or architectural photographic firm; provides professional experience and familiarizes students with working conditions and expectations in their field.
- Print Media Internship—Provides professional experience and familiarizes students with practices and expectations in the field. An internship may be arranged with a commercial or not-for-profit print studio or gallery.

ART 499 Independent Study Studio Art
Credits: 1
Prerequisites: accepted art major, permission of instructor
Corequisites: None
Type: TUT
Open to studio majors only. Requires a written proposal of the project and its justification, and approval by a faculty member supervising the work.
Art History

**AHI 101 Survey of Art History: Egypt to Northern Renaissance**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Corequisites: None  
Type: REC  
Chronological survey of painting, architecture, and sculpture from the beginnings of Christian art to the Northern Renaissance; stylistic analysis of works of art within social and historical contexts.

**AHI 102 Survey of Art History: Italian Renaissance to Present**

Credits: 3  
Prerequisites: AHI 101 Recommended  
Corequisites: None  
Type: LEC  
Corequisites: None  
Type: REC  
Chronological survey of painting, architecture, and sculpture from the Italian Renaissance to modern European and American art; stylistic analysis of works of art within social and historical contexts.

**AHI 103 Survey of Art History III**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Corequisites: None  
Type: REC  
Introduces the student to major monuments of the Western tradition, their historical and religious contexts, and the factors that shaped their development.

**AHI 155 Introduction to Contemporary Art**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Surveys contemporary art practices and the ideas that form them. Gives special attention to issues involved in the art featured in the University Art Gallery and other regional venues.

**AHI 200 Sophomore Tutorial**

Credits: 1  
Prerequisites: None  
Corequisites: None  
Type: TUT  
Problems vary year to year, but may include chemical process studies, studies of engineering materials, computer analysis of specific chemical engineering problems. Problems announced in previous semester. Assignments, where possible, follow student preferences and require consent of faculty members who guide the work.

**AHI 204 Mythology in Ancient Art**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Greek and Near Eastern mythologies in ancient art; mythological representations in the art of these cultures and the differences in the manner each represented similar myths; readings in mythology.

**AHI 206 Introduction to Chinese Art**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Familiarizes students with the major and minor arts of China from Neolithic to the Modern periods. Requires no prior exposure to the arts and culture of China. The course considers the artistic history of China in terms of its material culture, looking at techniques, materials, and processes, as well as stylistic influences and evolution.

**AHI 210 Art of the Middle Ages**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Drawing upon examples of the made and built environment from ca. 300 to ca. 1400, the course considers a number of topics of current interest to medievalists: becoming Christian, the power of the image, who makes art, who sees art, such liminal experience as pilgrimage and crusade, the cult of relics, the construction of the ruler, imperial and papal programs, and civic and individual patronage.

**AHI 212 Special Topics**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Examines a current topic of interest in Art History, i.e. architecture, medieval, non-Western, Asian, etc.

**AHI 251 Introduction to Modern Art**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Major ideas defining the art of the modern world; painting, sculpture, architecture, and related arts; what these works mean and how they illustrate changing views of modernity.

**AHI 254 Art of Nineteenth-Century France**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Painting and sculpture in France and its relationship to contemporary political, social, intellectual, and cultural developments; David, Ingres, Géricault, Delacroix, Daumier, Courbet, Manet, Monet, Degas, Rodin, Cézanne, Seurat, Van Gogh, and Gauguin; the modern artist in a society characterized by an accelerating sense of change.

**AHI 262 America in Art: an Introduction**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Offers a highly selective survey of U.S. painting, sculpture, architecture, photography, and popular culture from the Colonial era to the present. Focusing on five thematic units—gods, nature/culture, consumer culture, gender, and the body—the class provides an overview of U.S. art, suggesting how our material records both expresses and forms America's social, political, and cultural climate.

**AHI 275 Art and Revolution**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Draws upon examples of the made and built environment from ca. 1789, 1830, 1848, and 1917 to examine artists like David, Delacroix, Daumier, Courbet, and Malevich.

**AHI 300 Junior Tutorial**

Credits: 1  
Prerequisites: None  
Corequisites: None  
Type: TUT  
A continuation of CE 427.

**AHI 301 Art & Archaeology of Egypt**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Introduces the student to the sculpture, painting and architecture of Ancient Egypt, tracing its development stylistically and chronologically. Art will be presented in its historical and religious context.

**AHI 302 Art of Greece**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Architecture, painting, and sculpture of ancient Greece; archaic and classical periods; subsequent rise of new forms during the Hellenistic era.

**AHI 303 Early Greek Art and the Holy Land**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Architecture, painting, and metal work of the Aegean area, 2200 B.C.E. to 1200 B.C.E., art forms of Minoan and Mycenaean civilizations and their indebtedness to eastern cultures.

**AHI 304 Narration in Ancient Art**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Main themes in ancient art and on the manner in which they were narrated. These themes include mythological stories, historical events, political justifications, and propaganda. Media include wall painting, vase painting, and sculpture.

**AHI 305 Greek Sculpture**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Significance of monumental bronze and marble sculptures of archaic and classical Greece; the development of sculptural style and content through the study of Greek literature and history.

**AHI 307 Art of Early Greece**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Introduces the student to major monuments and issues of Aegean archaeology. We focus on the architecture, sculpture, and wall painting of the Greek Bronze Age. Archaeological sites to be visited include Lerna, Vasiliki, Knossos, Phaistos, Zakros, Mycenae, Pylos, Phylakopi, and Kea. We consider Aegean foreign relations and trade, cult, social organization, and literacy.

**AHI 308 Art and Archaeology of Rome**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Introduces students to the study of Roman art and archaeology; how the monuments of Rome reflect imperial propaganda; how the archaeological remains testify to the daily life of the citizens of the Roman Empire.

**AHI 310 Early Medieval Art**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Painting, architecture, sculpture, and minor arts from the decline of the Roman Empire through the Ottonian era; the beginnings of Christian art.
AHI 311 Indigenous Arts: Past, Present
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Sees the art of North and South American natives, Canadian natives, and aboriginal people of Australia from both the native and the nonnative perspective; discussions focus on differing world views or ideologies, in conjunction with the impact of colonization.

AHI 312 Romanesque Art
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Painting, sculpture, architecture, and minor arts in France, Spain, Italy, and England from A.D. 1050 to A.D. 1150; the course addresses the importance of crusades, pilgrimage, and monastic reform.

AHI 317 Art of the Middle Ages
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Drawing upon examples of the made and built environment from ca. 300 to ca. 1400, the course considers a number of topics of current interest to medievalists: becoming Christian, the power of the image, who makes art, who sees art, such liminal experience as pilgrimage and crusade, the cult of relics, the church as heavenly Jerusalem, imperial and papal programs, and civic and individual patronage. LEC

AHI 319 Special Topics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines a current topic of interest in art history, i.e. architecture, medieval, non-Western, Asian, etc.

AHI 320 Northern Renaissance Art
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines the variety of artistic achievements during the fifteenth and sixteenth centuries in northern Europe, primarily in Flanders and Germany. The works discussed range from the intense mystical realism of Jan van Eyck and Roger van der Weyden to the classical idealism of Albrecht Durer and to the visionary imagery of Bosch and Bruegel. Emphasizes painting, but devotes some time also to the newly developing art of printmaking and the elaborate tradition of wooden sculpture. LEC

AHI 322 Italian Renaissance Art
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Painting and sculpture from early fifteenth-century Florentine art to the High Renaissance in Rome and Florence; covers the intellectual developments of fifteenth and sixteenth-century Italy, such as civic humanism and Neoplatonism.

AHI 324 Italian Mannerist Art
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Development of central Italian art in the early- and mid-sixteenth century; relationship of mannerism to Renaissance and High Renaissance; current definitions of mannerism.

AHI 325 Greek Art and Mythology
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines the mythological depictions in Greek vase painting, sculpture, and metalwork during 700-300 B.C.E. Emphasizes Archaic and Classical vase painting and sculpture and its artistic and historical context. Students read Greek mythology and discuss Greek art.

AHI 328 Renaissance Architecture
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Reviews major architectural developments of the fifteenth and sixteenth centuries in Italy. Includes major works of Brunelleschi, Alberti, Michelangelo, Leonardo, and many others. Emphasizes how architecture reflects Renaissance humanist ideas. Investigates key building projects, such as St. Peter's in Rome, to examine the confluence of ideas from several disciplines.

AHI 330 Italian Baroque Art
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Art of central Italy, particularly Rome, in the early seventeenth century; its influence on the rest of Italy; how the change in cultural ideology affected artistic change.

AHI 331 Michelangelo and His Era
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Painting, sculpture, and architecture of Michelangelo; the uniqueness and impact on the development of Renaissance concepts; major historical events of the sixteenth century affecting Italian art; the Reformation and Counter Reformation; historiography of Michelangelo and his image; his popularity from the sixteenth century until the present day.

AHI 332 Rembrandt and His Era
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies the art of Holland in the baroque period, concentrating on the life and work of Rembrandt. Also emphasizes the careers of Hals and Vermeer, and the so-called "little masters". Considers the distinct character of Dutch art and its relationship to that of the rest of baroque Europe.

AHI 333 Northern Baroque Painting
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Locates discussion at the crossroads of nineteenth- to twentieth-century indigenous North American and Euroamerican exchange. Enables students to understand the relationship among contact, trade, tourism, economics, and cultural confluence. Places art and native women at the center as ongoing strategies for survival. Demonstrates the conflation of Victorian aesthetics with Iroquoian, Algonquian, Cree, Micmac, and Ojibwa traditions in the art.

AHI 335 Japanese Architecture
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Explores the development of Buddhist art and architecture in Japan from the introduction of Buddhism to Japan in the sixteenth century. Examines paintings, sculpture, and ritual implements, as well as architecture, temple plans, and landscape gardens. Considers the function of art in Buddhist practice; the perception of Buddhist art by lay and clerical audiences; the role of art in Buddhist philosophy; the relationship between the Buddhist arts of Japan and art in China, Korea, and India; syncretic elements in Japanese Buddhist art, especially those arising from Shinto beliefs; and the different forms of religious and artistic expression to be seen in the centers of power and the rural areas of ancient Japan.

AHI 339 Japanese Painting and Prints
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Explores the major trends in Japanese pictorial art from the seventh century to the early twentieth century. Focuses on important developments in style and subject matter, particularly emphasizing the relationship between Japanese art and that of continental Asia.

AHI 345 Chinese Painting Premodern-Present
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Offers a general view of the development of modern and contemporary Chinese art by discussing the emergence of Chinese modernism in the pre-modern period, the new modern art movement in the 1930s, Maos revolutionary art, and the avant-garde movement in the post-Mao period. Through lectures, readings and discussions, this course investigates the momentous changes—political, economic, and cultural—that have swept through modern Chinese history and have profoundly impacted the development of modern and contemporary Chinese art. Also examines how rapid modernization, changing political realities, and conflicting global, ethnic, and local identities are transforming centuries-old Chinese visual traditions and the cultural assumptions behind them.
AHI 346 Chinese Painting/Calligraphy

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Exposes the representations of figures and landscapes from the dawn of Chinese painting in the pre-Han period through the Yuan dynasty. Particularly stresses important developments in style and subject matter. Supplements classroom study of visual images with readings from ancient Chinese critical and theoretical writings (in translation) and modern art historical readings. As appropriate, relates issues in style and subject matter to contemporary developments in philosophy, religion, government, society, and culture.

AHI 347 African American Art

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Examines a current topic of interest in art and culture. The course also takes advantage of some faculty-undergraduate research, in the instructor's area of expertise and involves improvisation, Black aesthetic, Pan American arts and creativity, such as Africanism, and gender. Slides, films, and videos are used extensively to illustrate topics discussed in class.

AHI 348 Special Topics

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Concentrates on a different theme each time, such as Art of Islamic Iran, Art of the Ottoman Empire, History of Istanbul, Women and Islamic Art, and Islamic Painting.

AHI 349 Junior Seminar

Credits: 3
Prerequisites: art history major or permission of instructor
Corequisites: None
Type: SEM

Topics course; the format is largely discussion but also includes classroom presentation and collaborative research. The specific topic varies with the instructor's area of expertise and involves some faculty-undergraduate research, with a general presentation at the end of the term. The course also takes advantage of current exhibition projects, visiting faculty, and regional events.

AHI 350 Eighteenth-Century European Art and Ideas

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Explores the representations of figures and landscapes from the dawn of Chinese painting in the pre-Han period through the Yuan dynasty. Particularly stresses important developments in style and subject matter. Supplements classroom study of visual images with readings from ancient Chinese critical and theoretical writings (in translation) and modern art historical readings. As appropriate, relates issues in style and subject matter to contemporary developments in philosophy, religion, government, society, and culture.

AHI 351 Art of Islam

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Introduces Islamic culture and its art and architecture. Uses both a chronological and geographical approach, beginning with the establishment of Islam in Arabia in the seventh century, following the course of its spread throughout Europe, Asian and Africa, and ending with contemporary Islamic art and architecture.

AHI 352 Topics in Islamic Art

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Familiarizes students with Islamic culture and its art and architecture by focusing on specific topics and issues, such as architecture, painting, patronage, or a geographic region. Concentrates on a different theme each time, such as Art of Islamic Iran, Art of the Ottoman Empire, History of Istanbul, Women and Islamic Art, and Islamic Painting.

AHI 355 Painting and Sculpture: 1789-1850

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Painting and sculpture produced in the new European democracies for a widening, critical public. Focus on neoclassicism, romanticism, and realism. Considers these styles in light of the Industrial Revolution in England, political revolution in France, and the intellectual currents of the Enlightenment.

AHI 358 Impressionism and Postimpressionism

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

French art from 1860-1900; Manet, Monet, Renoir, Degas, Seurat, Gauguin, Van Gogh, Toulouse-Lautrec, and Cézanne; the aesthetic nature of their works and the connection to contemporary literary, political, philosophical, and scientific developments. Impact of impressionism and postimpressionism on the art of the twentieth century.

AHI 360 Frank Lloyd Wright

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Examines how American writers and artists negotiated the complexities of U.S. society during the final third of the nineteenth century. Emphasizing issues ranging from women's rights to laissez-faire capitalism, and from Reconstruction to manifest destiny, we consider how the era's cultural products provided artists, patrons, and audiences with metaphoric coping strategies to counteract what Victorians perceived to be the period's overwhelming social and political changes.

AHI 361 Art Between World Wars I and II

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Art produced between 1920 and 1940 in France, Germany, Russia, and the United States; impact of social and political events on culture.

AHI 364 American Realisms: The Evolution of the Real in American Art

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Begins with an introduction to European realism and a discussion of its adaptation to an American context during the final quarter of the nineteenth century. The course then denaturalizes Realism's ties with objectivity, explaining the movement as one in a series of subjective strategies for ordering one's relation to the world. Focusing then on several discrete artistic movements, the course considers the changing cultural functions of "the real", ranging from the early nineteenth through the late twentieth centuries. Movements to be addressed include romanticism, sentimentality, naturalism, impressionism, urban realism, regionalism, abstraction, expressionism, neo-realism, and postmodernism.

AHI 365 Art and Culture in Victorian America

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Examines how American writers and artists negotiated the complexities of U.S. society during the final third of the nineteenth century. Emphasizing issues ranging from women's rights to laissez-faire capitalism, and from Reconstruction to manifest destiny, we consider how the era's cultural products provided artists, patrons, and audiences with metaphoric coping strategies to counteract what Victorians perceived to be the period's overwhelming social and political changes.

AHI 366 Art and Culture in Victorian America

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Examines how American writers and artists negotiated the complexities of U.S. society during the final third of the nineteenth century. Emphasizing issues ranging from women's rights to laissez-faire capitalism, and from Reconstruction to manifest destiny, we consider how the era's cultural products provided artists, patrons, and audiences with metaphoric coping strategies to counteract what Victorians perceived to be the period's overwhelming social and political changes.

AHI 367 Art Between World Wars I and II

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Art produced between 1920 and 1940 in France, Germany, Russia, and the United States; impact of social and political events on culture.

AHI 368 Modern Architecture

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Examines the representations of gender (femininity and masculinity) in pictures, and the impact of gender on making and looking at art and media. Discusses works from several historical periods, concentrating on nineteenth- and twentieth-century art and media. Topics and issues considered are the professionalization of the artist and myths of genius; artists and models; the problems of a “feminine” aesthetic; the nude; and the gendered spectator.

AHI 369 Modern Architecture

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Considers the representation of gender (femininity and masculinity) in pictures, and the impact of gender on making and looking at art and media. Discusses works from several historical periods, concentrating on nineteenth- and twentieth-century art and media. Topics and issues considered are the professionalization of the artist and myths of genius; artists and models; the problems of a “feminine” aesthetic; the nude; and the gendered spectator.

AHI 370 Modern Architecture

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Considers the representation of gender (femininity and masculinity) in pictures, and the impact of gender on making and looking at art and media. Discusses works from several historical periods, concentrating on nineteenth- and twentieth-century art and media. Topics and issues considered are the professionalization of the artist and myths of genius; artists and models; the problems of a “feminine” aesthetic; the nude; and the gendered spectator.

AHI 371 Modern Architecture

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Considers the representation of gender (femininity and masculinity) in pictures, and the impact of gender on making and looking at art and media. Discusses works from several historical periods, concentrating on nineteenth- and twentieth-century art and media. Topics and issues considered are the professionalization of the artist and myths of genius; artists and models; the problems of a “feminine” aesthetic; the nude; and the gendered spectator.

AHI 372 Modern Architecture

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Considers the representation of gender (femininity and masculinity) in pictures, and the impact of gender on making and looking at art and media. Discusses works from several historical periods, concentrating on nineteenth- and twentieth-century art and media. Topics and issues considered are the professionalization of the artist and myths of genius; artists and models; the problems of a “feminine” aesthetic; the nude; and the gendered spectator.

AHI 373 Modern Architecture

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Considers the representation of gender (femininity and masculinity) in pictures, and the impact of gender on making and looking at art and media. Discusses works from several historical periods, concentrating on nineteenth- and twentieth-century art and media. Topics and issues considered are the professionalization of the artist and myths of genius; artists and models; the problems of a “feminine” aesthetic; the nude; and the gendered spectator.

AHI 374 Modern Architecture

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Considers the representation of gender (femininity and masculinity) in pictures, and the impact of gender on making and looking at art and media. Discusses works from several historical periods, concentrating on nineteenth- and twentieth-century art and media. Topics and issues considered are the professionalization of the artist and myths of genius; artists and models; the problems of a “feminine” aesthetic; the nude; and the gendered spectator.

AHI 375 Modern Architecture

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Considers the representation of gender (femininity and masculinity) in pictures, and the impact of gender on making and looking at art and media. Discusses works from several historical periods, concentrating on nineteenth- and twentieth-century art and media. Topics and issues considered are the professionalization of the artist and myths of genius; artists and models; the problems of a “feminine” aesthetic; the nude; and the gendered spectator.

AHI 376 Modern Architecture

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Considers the representation of gender (femininity and masculinity) in pictures, and the impact of gender on making and looking at art and media. Discusses works from several historical periods, concentrating on nineteenth- and twentieth-century art and media. Topics and issues considered are the professionalization of the artist and myths of genius; artists and models; the problems of a “feminine” aesthetic; the nude; and the gendered spectator.

AHI 377 Modern Architecture

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Considers the representation of gender (femininity and masculinity) in pictures, and the impact of gender on making and looking at art and media. Discusses works from several historical periods, concentrating on nineteenth- and twentieth-century art and media. Topics and issues considered are the professionalization of the artist and myths of genius; artists and models; the problems of a “feminine” aesthetic; the nude; and the gendered spectator.

AHI 378 Modern Architecture

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Considers the representation of gender (femininity and masculinity) in pictures, and the impact of gender on making and looking at art and media. Discusses works from several historical periods, concentrating on nineteenth- and twentieth-century art and media. Topics and issues considered are the professionalization of the artist and myths of genius; artists and models; the problems of a “feminine” aesthetic; the nude; and the gendered spectator.
AHI 387 American Art
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Surveys the development of twentieth-century U.S. art, emphasizing art since 1945. Through a close examination of a diverse range of visual arts, including painting, film, video, photography, sculpture, earth works, and performance art, we explore what contemporary art reveals about American culture. While offering students exposure to many issues that are of critical concern to contemporary society, the course pays particular attention to questions surrounding sexuality, gender, race, and consumer culture.

AHI 390 American Architecture as American Pluralism
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Native American building, colonial, neoclassical, and eclectic styles, and the rise of industrialism, the impact of builders' guides, and the development of the architectural profession highlight this survey of American architecture to the Civil War.

AHI 395 Contemporary Art
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Art of contemporary life; art criticism; art and politics; art in the media; pop and minimal art; conceptual art, earthworks, realism, feminist art, and performance. Requires attendance at events and exhibitions at local galleries.

AHI 400 Senior Tutorial
Credits: 1
Prerequisites: permission of instructor
Corequisites: None
Type: TUT
A written proposal outlining and justifying the work must be presented to and approved by the faculty member with whom the work is to be done.

AHI 411 Special Topics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines a current topic of interest in art history, i.e. architecture, medieval, non-Western, Asian, modern, etc.

AHI 448 History of Photography
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Reviews photography's contribution to the visual arts of the nineteenth and twentieth centuries. Studies individual photographers, the nature and development of various styles, photography's relationship to other art media, and the effect of photographic imagery on our culture.

AHI 461 Architectural Preservation: History, Theory, and Practice
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces students to the history, theory, and practice of historic building preservation, a field that began in the nineteenth century and has continued to expand its scope and develop refine its approaches and techniques throughout the twentieth century. Following a grounding in historic styles and the history and development of approaches to historic preservation, the course culminates with site visits and student presentations on specific local preservation projects and issues. Buffalo and Western New York function as a laboratory for case studies of individual preservation projects.

AHI 480 Museum Studies
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Provides an understanding of the purpose, function, and organization of art museums and introduces managerial and curatorial skills and techniques essential to museum work. Writing assignments are intended to have students carefully examine works of art, compile information about works of art, describe works of art and express opinions and ideas about works of art.

AHI 494 Aims and Methods of Art History
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Looks closely at the ways in which influential art historians have analyzed and discussed works of art, and at the significance of the strategies that these art historians developed. The first half of the semester covers subjects like iconography, connoisseurship, formal and structural analysis, and psychoanalytical approaches.

AHI 496 Museum Internship
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Museum and gallery internships are available at such institutions as the Albright-Knox Art Gallery, the CFA Art Gallery, the University Art Gallery, the Amherst Museum, and the Castellani Art Museum of Niagara University. The opportunity is by permission only. Students are encouraged to take AHI 480 Museum Studies, before applying for an internship.

AHI 497 Honors Thesis Tutorial
Credits: 3
Prerequisites: Permission of Instructor
Corequisites: None
Type: TUT
Accepted senior pursue a specialized, independent study leading to an honors thesis. For further information, please contact the director of undergraduate studies.

AHI 499 Independent Study
Credits: 1
Prerequisites: None
Corequisites: None
Type: TUT
Three credit hours of independent study may be undertaken with a faculty member. It must be an outgrowth of course study already completed, and not a substitution for any of the required coursework. Only three credit hours may be applied toward the degree.

AS 110 The Asian American Experience
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
The Asian American experience from the beginning of Asians' and Pacific Islanders' entry into North America in the eighteenth century to the present. Investigates this phenomenon in connection with national and transnational power relations, economic structures, and political realities. Also considers the construction of American identities in the United States and their impact on Asian American communities and individuals. Goals are to develop a historical and multi-cultural perspective on the Asian American experience, to enlarge students' capacities for analytical and critical thinking, and to achieve a better understanding of the diversity within Asian American communities and of Asian Americans' social status in North America.

AS 117 Asian American Authors
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Focuses on Asian American literature and the social contexts for the formation of Asian American literary traditions and genres. Introduces students to major Asian American literary texts and authors, including recurrent themes, new modes of narratives, and innovative techniques. Addresses the impact of Asian Pacific histories and cultures on specific writers, while locating Asian American literature within the historical and cultural contexts of North America, particularly the formation and effects of racial and national identities in the United States and Canada.

AS 190 Asian American History
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces major themes in Asian American history from the beginning of Asian immigration to the present. The course examines why Filipinos, Chinese, Japanese, Koreans, South Asians, and Vietnamese came to North America and what happened to them in the contexts of ethnic identity, gender, community, and family.
AS 220 Culture & Arts of East Asia
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces traditional and contemporary aesthetics, thought, literature, and theatre of East Asia. The arts of China, Japan, and Korea had fascinated observers in the West for centuries, and reveal much about the rich cultures and vibrant societies of East Asia. Team-taught by Asian specialists in the humanities from several UB departments.

AS 270 Asian American Women Writers
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines Asian American women’s writings and the social, cultural, and historical contexts that shape their thematic concerns, narrative strategies, and poetic styles. Through Asian American women’s prose and poetry, we seek to understand the formation of gender, racial, and sexual identities, and their effects on Asian American women’s literary traditions and innovations. Examines the relations between gender and genre, between race and class, and between culture and sexuality.

AS 348 Asian Americans and the Visual Media
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Investigates Hollywood representations of Asians and Asian Americans and Asian Americans’ self-representations. Through a comparative analysis of Hollywood films and Asian American films and videos, we seek a better understanding of the tactics and specific historical contexts for constructing identities of ‘race,’ gender, ethnicity, and sexuality. This understanding provides a historical and critical perspective for examining both the content and technique of Asian Americans’ films and videos.

AS 392 Asian Religions
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Provides an overview of the major religions of Asia (Hinduism, Buddhism, and Islam) in the light of their sacred texts, and focuses on the theological underpinnings, stories, and practices of each tradition. This course fosters a better understanding of religion in general, and familiarity with the spiritual values that shape everyday lives in many different locales worldwide.

AS 393 Topics in Asian Studies
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Varying topics in Asian studies, chosen by the instructor.

AS 394 Topics in Asian Studies
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Varying topics in Asian studies, chosen by the instructor.

AS 395 Topics in Asian Studies
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Varying topics in Asian studies, chosen by the instructor.

AS 396 Topics in Asian American Studies
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Varying topics in Asian American studies, chosen by the instructor.

AS 397 Topics in Asian American Studies
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Varying topics in Asian American studies, chosen by the instructor.

AS 398 Senior Research in Asian Studies
Credits: 3
Prerequisites: Majors only
Corequisites: None
Type: TUT
A capstone course required for all majors in Asian Studies. Research, writing, and oral presentation of project carried out under the guidance of a faculty member.

AS 399 Topics in Asian Studies
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Varying topics in Asian studies, chosen by the instructor.

AS 106 Volleyball
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Develops basic skills in volleyball: correct methods of passing, setting, spiking, and serving; rules, scoring, and team play.

ATH 110 Jogging & Conditioning
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Various modalities for achieving and maintaining a conditioning program; conditioning exercises; jogging.

ATH 111 Beginning Tennis
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Strictly for beginners. Basic skills necessary for participation in game of tennis.

ATH 112 Intermediate Tennis
Credits: 1
Prerequisites: permission of instructor based on the completion of a beginning course with a grade of B or better, or demonstrated appropriate knowledge and skills
Corequisites: None
Type: LEC
Elements of good swimming; whole stroke; increased endurance; versatility. (ARC certification available.)

ATH 119 Introduction to Swimming
Credits: 1
Prerequisites: nonswimmer
Corequisites: None
Type: LEC
For the nonswimmer; basic skills of swimming and the rudiments of safety in and about the water. (ARC certification available.)

ATH 121 Intermediate Swimming
Credits: 1
Prerequisites: permission of instructor based on the completion of a beginning course with a grade of B or better, or demonstrated appropriate knowledge and skills
Corequisites: None
Type: LEC
Lifeguard training teaches the student/candidate to prevent, prepare for and respond to emergencies in aquatic settings. Students also learn CPR and AED skills. Strong swimming skills are a must. Fee of $70.00

ATH 125 Water Safety Instructor
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
For swimmers who are Level 5 or better. Gives students knowledge, skills and practical experience in preparation for teaching swimming and water safety classes to children and adults from diverse populations. Fee of $70.00

ATH 130 Introduction to Ice Skating
Credits: 2
Prerequisites: None
Corequisites: None
Type: LEC
Ice skating skills, technique, patterns, balance, rhythm and timing, body alignment and posture.

ATH 133 Fundamental Martial Arts and Self Defense
Credits: 2
Prerequisites: None
Corequisites: None
Type: LEC
Basic skills involved in the sport of martial arts and self defense situations.
ATH 136 Self Defense For Women
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Enhances the options of self-defense for women by providing information and tactics for various types of abductive encounters perpetrated against women. For women only. RAD certified.

ATH 143 Beginning Racquetball
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Every phase of the game: singles, cut-throat; develops skills and physical fitness level.

ATH 145 Beginning In Line Skating
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Develops skills for skating, gliding, balance, forward and backward skating, stopping, pivots, and crossovers.

ATH 146 Intermediate In Line Skating
Credits: 1
Prerequisites: Permission of instructor based on the completion of a beginning course with a grade of B or better, or demonstrated knowledge of the skill.
Corequisites: None
Type: LEC
Reviews basic skills and safety components of in-line skating. Improves performance of basic skills to an increased proficiency level.

ATH 147 Roller Hockey
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Includes basic skating, shooting, position play, and strategies necessary to play at a beginner level.

ATH 150 Social Dance: Tango and Latin American Rhythms
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Basic dance patterns and variations of modern ballroom dancing. Students acquire skill in leading, following, and dancing comfortably and smoothly.

ATH 151 Folk and Square Dancing
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Basic steps: slides, polkas, waltzes, schottishes, grapevines, and hops used in dances of many different ethnic groups.

ATH 152 Latin American Rhythms
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Details of Latin American dances and rhythms.

ATH 153 Social Dance: Swing and American Rhythms
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Basic dance patterns and variations of modern ballroom dancing. Students acquire skill in leading, following, and dancing comfortably and smoothly.

ATH 154 Introduction to Wellness
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Aims to enhance overall wellness. Includes lab, which emphasizes strategy and play.

ATH 156 Hatha Yoga 2
Credits: 1
Prerequisites: Permission of instructor based on the completion of a beginning course with a grade of B or better, or demonstrated knowledge of the game and previous playing experience.
Corequisites: None
Type: LEC
Basic Hatha Yoga postures (asanas), breathing exercises (pranayama), and relaxation techniques.

ATH 157 Hatha Yoga 3
Credits: 1
Prerequisites: Yoga 1 and Yoga 2
Corequisites: None
Type: LEC
Advanced Hatha Yoga class that includes challenging postures, longer holding times, pranayama (breathing) practices, and relaxation for deeper self awareness.

ATH 158 Beginning Badminton
Credits: 1
Prerequisites: Permission of instructor based on the completion of a beginning course with a grade of B or better, or demonstrated knowledge of the game and previous playing experience.
Corequisites: None
Type: LEC
Basic dance patterns and variations of modern ballroom dancing. Students acquire skill in leading, following, and dancing comfortably and smoothly.

ATH 159 Beginning Badminton
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Basic dance patterns and variations of modern ballroom dancing. Students acquire skill in leading, following, and dancing comfortably and smoothly.

ATH 160 Tai Chi 1
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Introduction to the principles of movement, meditation, and relaxation found within the Chen system of Tai Chi. Emphasis will be placed on developing balance between strength and flexibility as well as practicing proper body mechanics in motion and finding proper posture in standing.

ATH 161 Beginning Badminton
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Basic dance patterns and variations of modern ballroom dancing. Students acquire skill in leading, following, and dancing comfortably and smoothly.

ATH 162 Beginning Badminton
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Basic dance patterns and variations of modern ballroom dancing. Students acquire skill in leading, following, and dancing comfortably and smoothly.

ATH 163 Beginning Badminton
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Basic dance patterns and variations of modern ballroom dancing. Students acquire skill in leading, following, and dancing comfortably and smoothly.

ATH 164 Beginning Badminton
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Basic dance patterns and variations of modern ballroom dancing. Students acquire skill in leading, following, and dancing comfortably and smoothly.

ATH 165 Beginning Badminton
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Basic dance patterns and variations of modern ballroom dancing. Students acquire skill in leading, following, and dancing comfortably and smoothly.

ATH 166 Intermediate Badminton
Credits: 1
Prerequisites: Permission of instructor based on the completion of a beginning course with a grade of B or better, or demonstrated knowledge of the game and previous playing experience.
Corequisites: None
Type: LEC
Advanced techniques of play and skills. Emphasizes strategy and play.

ATH 168 Beginning Backpacking
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Introductory course; develops skills of beginning backpacking and hiking. Focuses on team-building skills and group dynamics. Includes required weekend backpacking trip. Fee of $65.00 includes guides, meals, transportation, and limited equipment.

ATH 170 Canoeing
Credits: 1
Prerequisites: Ability to swim 100 meters with life jacket and tread water five minutes
Corequisites: None
Type: LEC
Basic skills instruction for flat-water canoeing. Includes instruction on safety maneuvers, rescue, and trip planning. Focuses on team-building skills and group dynamics. Final includes all-day and/or weekend trip. Lab fee of $75.00 includes guides, meals, equipment, and transportation.

ATH 173 Aerobic Dance
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Aerobic exercises (pranayama), and relaxation techniques.

ATH 175 Basic Hatha Yoga
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Basic Hatha Yoga postures (asanas), breathing exercises (pranayama), and relaxation techniques.

ATH 176 Hatha Yoga 1
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Basic postures (asanas), breathing exercises (pranayama), and relaxation techniques.

ATH 177 Hatha Yoga 2
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Advanced Hatha Yoga class that includes challenging postures, longer holding times, pranayama (breathing) practices, and relaxation for deeper self awareness.

ATH 179 Introduction to Wellness
Credits: 3
Prerequisites: ATH 221, ATH 222, ATH 299
Corequisites: None
Type: LEC
Develops an understanding of the technical and personal problems that confront the coach of an athletic team.

ATH 180 Introduction to Wellness
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Develops an understanding of the technical and personal problems that confront the coach of an athletic team.

ATH 181 Beginning Badminton
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Basic dance patterns and variations of modern ballroom dancing. Students acquire skill in leading, following, and dancing comfortably and smoothly.

ATH 182 Beginning Badminton
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Basic dance patterns and variations of modern ballroom dancing. Students acquire skill in leading, following, and dancing comfortably and smoothly.

ATH 183 Beginning Badminton
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Basic dance patterns and variations of modern ballroom dancing. Students acquire skill in leading, following, and dancing comfortably and smoothly.

ATH 184 Beginning Badminton
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Basic dance patterns and variations of modern ballroom dancing. Students acquire skill in leading, following, and dancing comfortably and smoothly.

ATH 185 Beginning Badminton
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Basic dance patterns and variations of modern ballroom dancing. Students acquire skill in leading, following, and dancing comfortably and smoothly.

ATH 186 Beginning Badminton
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Basic dance patterns and variations of modern ballroom dancing. Students acquire skill in leading, following, and dancing comfortably and smoothly.

ATH 187 Beginning Badminton
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Basic dance patterns and variations of modern ballroom dancing. Students acquire skill in leading, following, and dancing comfortably and smoothly.

ATH 188 Beginning Badminton
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Basic dance patterns and variations of modern ballroom dancing. Students acquire skill in leading, following, and dancing comfortably and smoothly.

ATH 189 Beginning Badminton
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Basic dance patterns and variations of modern ballroom dancing. Students acquire skill in leading, following, and dancing comfortably and smoothly.

ATH 200 Introduction to Wellness
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Aims to enhance overall wellness. Includes lab, which allows students to experience specific activities.
ATH 496 Coaching Internship
Credits: 3
Prerequisites: ATH 221, ATH 222, ATH 230, ATH 299
Corequisites: None
Type: LAB
Lab experience designed to enhance coaching certification for nonphysical education majors.

ATH 499 Independent Study
Credits: 1
Prerequisites: None
Corequisites: None
Type: TUT
Soil-water-contaminant interaction phenomena, effects of contaminants on conductivity and contaminant transport phenomena, effects of contaminants on soil properties, design aspects of landfills, waste-disposal systems, barriers and cutoff walls, site characterization, and soil remediation.

BIOCHEMISTRY

BCH 401 Introduction to Research
Credits: 1
Prerequisites: accepted biochemistry major
Corequisites: None
Type: LEC
For accepted students about to start the upper-division biochemistry program. Meets once per week for one hour, with scheduled library workshops. Includes critically reading a scientific paper, introduces library skills needed to do research, and correlates basic biochemistry knowledge with ongoing research programs in the Biochemistry department. Students use these presentations to help them arrange for 2 credit hours of BCH 498 for the following semester.

BCH 403 Biochemical Principles
Credits: 4
Prerequisites: BIO 200 and CHE 202
Corequisites: None
Type: LEC
One semester general biochemistry course for science majors and students of pharmacy. Covers protein and membrane structure and function, metabolism, and nucleic acid structure and molecular biology.

BCH 404 Advanced Topics in Biochemistry
Credits: 3
Prerequisites: BCH 401, BCH 403, accepted biochemistry major, or permission of instructor
Corequisites: None
Type: SEM
Covers five areas of biochemistry beyond the basic survey course BCH 403. Requires literature reading. Covers each subject area in 5 lectures; 3 didactic lectures, one faculty led paper discussion, and one student presentation.

BCH 405 Research Topics in Biochemistry
Credits: 3
Prerequisites: BCH 401, BCH 403, BCH 404, or permission of instructor
Corequisites: None
Type: SEM
Focuses on learning cutting-edge biochemistry by reading, analyzing, and discussing research papers. Emphasizes molecular and mechanistic aspects of signal transduction in growth, differentiation, development and cancer; and signaling in response to hormones to the nervous system.

BCH 407 Research Presentations
Credits: 1
Prerequisites: senior standing in biochemistry
Corequisites: None
Type: SEM
Students attend one research seminar of their choosing per week involving biochemistry and write a two- to three-page report of that seminar. If the student obtains a paper by the seminar speaker and incorporates that into the report, it takes the place of one seminar.

BCH 408 Gene Expression
Credits: 2
Prerequisites: permission of instructor
Corequisites: None
Type: SEM
Elective course that familiarizes students with up-to-date concepts in eukaryotic gene expression. Through a classroom discussion of selected papers, introduces students to current issues in gene transcription, mRNA processing, and their regulation. Augments classroom learning with detailed problem sets.

BCH 498 Undergraduate Research Participation in Biochemistry
Credits: 1
Prerequisites: Permission of instructor
Corequisites: None
Type: TUT
Under the direction of faculty, the course consists of an original investigative project involving library and lab work. Open to majors as a research project. Requires one poster presentation. Students must complete 8 credit hours.

BCH 499 Independent Study
Credits: 1
Prerequisites: None
Corequisites: None
Type: TUT
For students having specific academic interests or objectives; requires a department faculty sponsor before preregistration.

BIOLOGY

BIO 101 Licit and Illicit Drugs
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC/LAB
Biological significance of commonly used medicinal and special drugs. Influence of such drugs as aspirin, tranquilizers, alcohol, marijuana.

BIO 129 Perspectives in Human Biology
Credits: 3.5
Prerequisites: None
Corequisites: None
Type: LEC/LAB
Lectures and laboratory for students who need to fulfill one year of science plus one semester of lab, and general education requirement. Structural and functional characteristics of living things emphasizing human biology and genetics; the significance of these characteristics with respect to humanity’s future.

BIO 130 Perspectives in Human Biology
Credits: 4
Prerequisites: Senior standing in bio sciences
Corequisites: None
Type: LEC
Lectures emphasize experimental foundations of our understanding of cells and cell organelles and cover the mechanisms underlying cell reproduction, cell motility, and cell energetics. Laboratories provide practice in quantitative analysis emphasizing pipetting, pH, spectrophotometry, and centrifugation.
BIO 205 Fundamentals of Biological Chemistry
Credits: 3
Prerequisites: CHE 201, CHE 251 and CHE 203
Corequisites: None
Type: LEC
Basic course in the fundamentals of biological chemistry for students majoring in biological science and nonmajors with an interest in the subject.

BIO 215 Fundamentals of Biological Chemistry Laboratory
Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB/LEC
Introductory laboratory course in biological chemistry. Experiments deal with the basic methods of isolation, measurements, and characterization of macromolecules.

BIO 302 Introduction to Molecular Biology
Credits: 3
Prerequisites: BIO 205 or BCH 403
Corequisites: None
Type: LEC
Structure and function of molecules, such as carbohydrates, proteins, lipids, and nucleic acids. Enzymes and energetics. Nucleic acid synthesis, replication, transcription, protein synthesis, and the genetic code.

BIO 309 Ecology Lecture
Credits: 3
Prerequisites: BIO 200
Corequisites: None
Type: LEC
Processes that control the abundance and distribution of organisms in their natural environments; emphasizing population, community, and evolutionary ecology.

BIO 310 Ecological Methods
Credits: 2
Prerequisites: BIO 309
Corequisites: BIO 309
Type: LAB/LEC
Field exercises to illustrate major concepts of modern ecology, and the techniques and procedures used in ecological research.

BIO 318 Plant and Fungal Morphology
Credits: 4
Prerequisites: BIO 200, or permission of instructor
Corequisites: None
Type: LEC/LAB
Structure and reproduction of both plant kingdom members and fungi: algae, liverworts, mosses, ferns, and seed plants.

BIO 319 Genetics
Credits: 3
Prerequisites: BIO 205 or BCH 403
Corequisites: None
Type: LEC
Basic genetic principles emphasizing the molecular basis of heredity. Structure, replication, and function of the genetic material, regulation of gene expression, and genetic recombination.

BIO 328 General Physiology
Credits: 2
Prerequisites: BIO 328
Corequisites: BIO 328
Type: LAB/LEC
Hands-on opportunity to learn technical skills with a variety of physiological instrumentation and to observe model systems discussed in BIO 328.

BIO 338 General Physiology Laboratory
Credits: 4
Prerequisites: BIO 205
Corequisites: None
Type: LEC
 Covers major topics in cell and developmental biology at the advanced textbook level. Emphasizes the experimental basis underpinning our current knowledge.

BIO 367 Developmental Biology
Credits: 3
Prerequisites: BIO 319
Corequisites: None
Type: LEC
Cellular and molecular mechanisms involved in growth and differentiation in animal development.

BIO 369 Fungi and Their Medical Importance
Credits: 3
Prerequisites: BIO 201
Corequisites: None
Type: LEC
Structure, nutritional requirements, ecology, and economic importance of fungi. Examines the biology of fungi causing major diseases in humans.

BIO 400 Bioinformatics / Genome Analysis
Credits: 4
Prerequisites: BIO 319 or permission of instructor
Corequisites: None
Type: LEC
Computerized analysis of genetic information from a biological perspective. Lectures focus on assumptions, limitations, and strategies of bioinformatics algorithms and statistics. Labs use computers to address biological questions.

BIO 401 Advanced Biological Chemistry
Credits: 4
Prerequisites: BIO 205 or BCH 403
Corequisites: None
Type: LEC
Applications of spectroscopic techniques to determinations of kinetic, thermodynamic, and equilibrium constants characterizing interactions between biological macromolecules. Microtubule assembly, hormone/receptor interactions, and lac repressor binding to DNA.

BIO 404 Advanced Molecular Genetics
Credits: 4
Prerequisites: BIO 319
Corequisites: None
Type: LEC
Biological information flow, replication, transcription, RNA processing, translation and gene expression.

BIO 407 Advanced Ecology
Credits: 3
Prerequisites: BIO 309
Corequisites: None
Type: LEC
Advanced course in the foundations of ecology emphasizing population and community ecology. Supplements lectures on basic ecological principles and models with discussions of both current and historically important issues.

BIO 411 Tropical Marine Ecology
Credits: 3
Prerequisites: BIO 309
Corequisites: None
Type: LEC
Surveys tropical marine ecosystems, emphasizing coral reef communities. Examines processes controlling abundance and distribution of marine taxa using primary literature.

BIO 412 Field Course in Tropical Marine Ecology
Credits: 3
Prerequisites: BIO 411
Corequisites: None
Type: LEC/LAB
An intensive two week field course in the Bahamas focusing on coral reef communities. Combining lectures, fieldwork, and laboratory analyses, students conduct in depth studies of Caribbean marine habitats.
BIO 417 Neurobiology
Credits: 3
Prerequisites: BIO 205
Corequisites: None
Type: LEC
Lectures and class discussions concerning nervous systems and neural functions of humans and other organisms. Emphasizes the physiology, biochemistry, and molecular biology of motor functions, learning, and memory.

BIO 418 Integrated Neuroscience
Credits: 3
Prerequisites: BIO 417
Corequisites: None
Type: LEC
A continuation of BIO 417; examines the major functions of the nervous system, perception and motor control, at molecular, cellular, and systems levels. Covers the neural basis of behavior and the cellular and molecular basis of neural diseases.

BIO 440 Experimental Endocrinology
Credits: 2
Prerequisites: junior standing in biology or other life sciences, or permission of instructor
Corequisites: None
Type: LEC
Molecular mechanisms mediating cellular integration of peptide hormone influences: role of hormones in cellular function, surface membrane receptor-transduction mechanisms, and nonmembrane receptor-transduction mechanisms.

BIO 448 Endocrinology
Credits: 3
Prerequisites: BIO 328
Corequisites: None
Type: LEC
Structure and function of the ductless glands as they coordinate physiological activities and influence animal behavior.

BIO 449 Evolutionary and Developmental Biology
Credits: 3
Prerequisites: BIO 367
Corequisites: None
Type: LEC
Explores how growing knowledge of developmental circuits, and their variation, affects our understanding of how organisms evolve.

BIO 456 Evolutionary Genetics
Credits: 3
Prerequisites: BIO 319 or permission of instructor
Corequisites: None
Type: LEC
Genetic and population-level processes that underlie evolutionary change; topics include population genetics, the effects of population size and selection, population structure, molecular evolution, intragenic conflict, molecular phylogenetics, and evolutionary development.

BIO 458 Molecular Ecology
Credits: 2
Prerequisites: permission of instructor
Corequisites: None
Type: LEC/LAB
The use of molecular genetic markers is becoming a widespread and important approach to studying ecological phenomena, such as population structure, migration, mating systems, and natural selection. Students learn to isolate and use molecular markers for ecological and evolutionary studies.

BIO 461 Basic Radiation Science
Credits: 3
Prerequisites: None
Type: LEC
Production, properties, interactions, dosimetry, detection, and instrumentation of radiation from radioisotopes, radiation-producing equipment and nuclear reactors, safe-handling procedures, and survey methods.

BIO 467 Techniques in Immunology
Credits: 3
Prerequisites: BIO 468
Corequisites: None
Type: LAB
Studies antigen-antibody interactions; agglutination; precipitation using Oudin and Ouchterlony reactions, immunoelectrophoresis, antibody purification.

BIO 468 Molecular Immunology
Credits: 3
Prerequisites: BIO 319
Corequisites: None
Type: LEC
Immunological phenomena; properties of antigens and antibodies, antigen-antibody interactions and detection, genetic basis of immunoglobulin biosynthesis, involvement of T and B cells in the humoral response.

BIO 495 Undergraduate Supervised Teaching
Credits: 1
Prerequisites: Permission of Instructor
Corequisites: None
Type: TUT
Enrollees participate as undergraduate teaching assistants under the supervision of faculty of the Department of Biological Sciences.

BIO 497 Honors in Biology
Credits: 1
Prerequisites: Permission of Instructor
Corequisites: None
Type: TUT
Research experience during the senior year. Enrollees are sponsored by a member of the faculty of the Department of Biological Sciences. Upon completion of the requirements of an honors research project, recognition is noted on the student's transcript.

BIO 498 Undergraduate Research
Credits: 1
Prerequisites: Permission of Instructor
Corequisites: None
Type: TUT
Students collaborate with faculty research mentors on an ongoing faculty research project or conduct independent research under the guidance of a faculty member.

BIO 499 Independent Study
Credits: 1
Prerequisites: permission of instructor
Corequisites: None
Type: TUT
A program that may include laboratory experience, library research, or tutorial study arranged with a faculty sponsor in the Department of Biological Sciences.

BMS 496 Biomedical Sciences Internship
Credits: 1
Prerequisites: Biomedical Sciences major
Corequisites: None
Type: TUT
Exposes students to a nonacademic environment within which to apply the knowledge gained via traditional coursework. Students have the opportunity to work with a community, government, or private agency as a student intern. This volunteer, credit-bearing experience gives students the opportunity to experience specific job settings. Students may opt for biomedical sciences work sites whose primary focus is clinical, business, or research.

BMS 498 Biomedical Sciences Research
Credits: 1
Prerequisites: Biomedical Sciences major
Corequisites: None
Type: LAB
Students collaborate with research mentors on an ongoing project in a laboratory setting or conduct independent research under the guidance of their mentors. This experience provides students with an inquiry-based learning opportunity and engages them as active learners in a research setting. Makes available opportunities to hone students' oral and written communication skills.
Biophysics

BPH 400 Biological Physics

Credits: 4
Prerequisites: BIO 201, CHE 203 or CHE 201, PHY 108
Corequisites: None
Type: LEC

Principles of biophysics and physics applied to biological problems as well as to single protein molecules will be discussed. The topics to be covered will be centered on biological cells and their molecules, molecular motion, energy, thermodynamics and chemical forces, cooperative phenomena, enzymes and molecular machines, and various molecular machines in biological membranes. The course addresses contemporary topics and their understanding in biophysical and physical principles underlying the function of individual molecules in biology.

BPH 402 Biophysics Problems for Undergraduates

Credits: 1
Prerequisites: permission of instructor
Corequisites: None
Type: LAB

Individual research projects in biophysics of mutual interest to student and instructor; experimental or theoretical project; may include training in appropriate biophysical techniques.

BPH 403 Molecular Biophysics

Credits: 3
Prerequisites: permission of instructor
Corequisites: None
Type: LEC

Introduces the major areas of molecular biophysics and their foundations in chemistry and physics. Includes molecular interactions, structural analysis through diffraction techniques, macromolecular physical chemistry, the effects of physical forces, and thermodynamic systems.

BPH 404 Physics of Medical Imaging I

Credits: 3
Prerequisites: permission of instructor
Corequisites: None
Type: LEC

Part I of a two semester course covering the basic physical principles of medical imaging. Provides an understanding of the principles of radiography (x-ray tubes and generators, x-ray interactions, screen/film systems, scattered radiation control, fluoroscopy, mammography, and digital imaging systems), image quality concepts and visual perception. Dual listed with BPH 504.

BPH 405 Biophysical Basics: Processes

Credits: 4
Prerequisites: permission of instructor
Corequisites: None
Type: LEC/REC

The third covers basic physico-chemical concepts of various properties related to cell membrane transport: osmotic pressure, permeability, membrane potential, excitability of nervous tissues and various ion channels. The remaining two-thirds are spent by instructors from various laboratories giving introductory sessions on respective up-to-date topics in their research fields: endocytic recycling in cells, exocytosis in synapses, membrane fusion, ion channel kinetics, ligand-gated ion channels, membrane mechanics, axonal properties, protein folding, and protein-nucleic acid interaction with optical trapping method. This course is dual listed with BPH 505.

BPH 410 Introductory Quantitative Biology

Credits: 3
Prerequisites: BIO 201, MTH 142, PHY 108
Corequisites: None
Type: LEC

This course will focus on data analysis, mathematical modeling and computational analysis of problems in cellular and molecular biology. Topics are selected from a variety of areas and cover most commonly used analysis and modeling approaches. These include, for example, chemical kinetics, diffusion, electrotonic interactions, single molecule kinetics, RNA/protein sequence analysis, macromolecular simulation, etc. In addition to basic theory, students will also gain hands-on experience on the use of computers and various computer programs. Abundant opportunity will be provided for students who have specific interests. This course is dual listed with BPH 510.

BPH 458 Experimental Biophysics

Credits: 3
Prerequisites: Majors only
Corequisites: None
Type: LAB

Senior research project: students work in the laboratories of faculty carrying out research in various areas of experimental (or theoretical) biophysics. Exposes students to techniques including: ion-channel and membrane protein structure analysis, electrophysiological procedures applicable to the investigation and analysis of neurological problems, biomaterials characterization, molecular structure determination, and biophysical techniques for the analysis and characterization of proteins. Opportunities are usually available to receive training in some clinical biophysical procedures and techniques in various hospital settings. A lab report describing student research accomplishments is required.

BPH 498 Research

Credits: 1
Prerequisites: Permission of Instructor
Corequisites: None
Type: LAB
Under the direction of faculty, experimental and theoretical research in the areas of biophysics, physiology and neurosciences.

BPH 499 Independent Study

Credits: 1
Prerequisites: permission of instructor
Corequisites: None
Type: TUT
For students having specific academic interests or objectives; requires department faculty sponsor before registration.

Biostatistics

STA 111 Introduction to Probability and Statistics I

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC/REC
Recommended for undergraduate students in the health sciences. Covers basic statistical concepts and techniques such as descriptive statistics, regression and correlation, analysis-of-variance, survival analysis and categorical data analysis as it pertains to clinical experiments and epidemiological investigations.

STA 112 Introduction to Probability and Statistics II

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Covers topics in descriptive statistics, probability, inference, and experimental design, all of which are put together to draw conclusions from uncertainty through analysis of experimental data. Although a general statistical methods course, the material (through examples) is geared towards sciences majors, especially those in the health sciences. Looks into the underlying reasoning behind the techniques rather than just pure application.

STA 119 Statistical Methods

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Recommended for undergraduate students in the health sciences. Covers basic statistical concepts and techniques such as descriptive statistics, regression and correlation, analysis-of-variance, survival analysis, categorical data analysis, and hypothesis testing. ANOVA models for 1, 2, and k way classifications; multiple comparisons; chi-square test of homogeneity; Fisher’s exact test; McNemar’s test; measures of association, including odds ratio, relative risks, Mantel-Haenszel tests of association, and standardized rates; repeated measures ANOVA; simple regression; and correlation.

STA 403 Statistical Comparisons and Associations

Credits: 3
Prerequisites: MTH 142; an introduction to statistics course is a recommended prerequisite
Corequisites: None
Type: LEC
Advanced presentation of statistical methods for comparing populations and estimating and testing associations between variables. Topics include point estimation; confidence intervals; hypothesis testing; ANOVA models for 1, 2, and k way classifications; multiple comparisons; chi-square test of homogeneity; Fisher’s exact test; McNemar’s test; measures of association, including odds ratio, relative risks, Mantel-Haenszel tests of association, and standardized rates; repeated measures ANOVA; simple regression; and correlation.
STA 404 Regression Analysis
Credits: 3
Prerequisites: STA 403
Corequisites: None
Type: LEC/LAB
Covers regression analysis and introduction to linear models. Topics include multiple regression, analysis of covariance, least square means, logistic regression, and non-linear regression. The course includes a one-hour computer lab and emphasizes hands-on applications to datasets from the health sciences.

STA 406 Introduction to Statistical Computing
Credits: 3
Prerequisites: STA 112 or permission of instructor
Corequisites: None
Type: LEC
Familiarizes students with PC-based statistical computing applications for public health, and is a companion course for STA 112 Introduction to Probability and Statistics II. Develops basic skills in the use of a statistical package through classroom demonstrations and independent lab assignments that complement the material covered in STA 112. Emphasizes data definition, verification, descriptive and inferential statistics, and graphical presentation. In addition, the course gives students the skills needed for effective data management, data manipulation, and data analysis at a basic level.

STA 421 Introduction to Theoretical Statistics I
Credits: 3
Prerequisites: MTH 142
Corequisites: None
Type: LEC/REC
Provides students with probability and distribution theory necessary for the study of statistics. Topics include axioms of probability theory, independence, conditional probability, random variables, discrete and continuous probability distributions, functions of random variables, moment generating functions, the Law of Large Numbers, and the Central Limit Theorem.

STA 422 Introduction to Theoretical Statistics II
Credits: 3
Prerequisites: STA 421
Corequisites: None
Type: LEC/REC
Introduces principles of statistical inference. Introduces and develops classical methods of estimation, tests of significance, the Neyman-Pearson Theory of testing hypotheses, maximum likelihood methods, and Bayesian statistics.

STA 427 Introduction to Medical Statistics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC/REC
Topics include descriptive statistics, probability concepts (such as independence and conditional probability), probability distributions of random variables, sampling distributions, estimation, confidence intervals, hypothesis testing, analysis of variance procedures, linear regression, and nonparametric methods. Computers and statistical packages are used throughout the course. Requires no extensive computer experience.

Business Administration

MGG 150 Business and Society
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Comprehensively provides a broad understanding of business, including various functions and their interrelationships; terminology; management fundamentals and competitive factors; legal and ethical issues; and consideration of various external elements, including society at large. Formerly MGT 150.

MGG 201 Introduction to Computers and Statistics
Credits: 4
Prerequisites: sophomore standing
Corequisites: None
Type: LEC/REC
Familiarizes students with computers and computer software packages relevant to business and management, and introduces students to basic concepts in accounting (modeled around spreadsheets) and statistics (modeled around descriptive statistics). Word-processing, spreadsheet, and statistics packages form an important part of the course. For hands-on computer literacy, the course includes supervised homework sections at specific times and sites.

MGA 201 Introduction to Accounting I
Credits: 3
Prerequisites: sophomore standing; open to any student in the university
Corequisites: None
Type: LEC/REC
Introduces a two-course sequence in financial and managerial accounting. Emphasizes the user, not the preparer, of accounting information. Analysis of corporate financial statements by external parties motivates study of the concepts and standards that shape the form and content of corporate financial statements. Similarly, the uses of accounting information by managers lead to the study of cost behavior, product costing, budgeting profitability analysis, and performance evaluation.

MGA 202 Introduction to Accounting II
Credits: 3
Prerequisites: MGA 201, sophomore standing; open to any student in the university
Corequisites: None
Type: LEC/REC
Introduces in a two-course sequence financial and managerial accounting. Emphasizes the user, not the preparer, of accounting information. Analysis of corporate financial statements by external parties motivates study of the concepts and standards that shape the form and content of corporate financial statements. Similarly, the uses of accounting information by managers lead to the study of cost behavior, product costing, budgeting profitability analysis, and performance evaluation.

MGG 300 Career Strategies, Planning, and Management
Credits: 2
Prerequisites: junior standing in the School of Management major
Corequisites: None
Type: LEC
A hands-on course taught by a team of faculty, Career Resource Center staff, area professionals, and alumni. Introduces a strategic approach to career planning and job search. Topics/activities cover the job market, job-search resources, developing a personal marketing strategy, researching potential employers, networking, interviewing, and résumé writing skills. Recommended for the junior year. Formerly MGT 300.

MGI 301 Human Resources Management and Labor Relations for Managers
Credits: 3
Prerequisites: junior standing in the School of Management
Corequisites: None
Type: LEC
Focuses on the systems and practices required to implement such HR functions as selection, development, compensation, and performance appraisal. Evaluates these HR decisions with a framework that considers the influence of legal and market environments, as well as union and nonunion settings. Course assignments emphasize managerial applications.

MGM 301 Principles of Marketing
Credits: 3
Prerequisites: ECO 182, PSY 101, sophomore standing in the School of Management
Corequisites: None
Type: LEC/REC
Examines the distribution of goods by marketing agencies. Considers the nature and scope of marketing problems, behavior of industrial buyers and consumers, channels of distribution, pricing, selling, marketing costs, efficiency, and governmental regulations.
MG 301 Organizational Behavior and Administration

Credits: 3
Prerequisites: PSY 101, junior standing in the School of Management
Corequisites: None
Type: LEC
Explores the systematic interrelation of economic, technological, psychological, and sociological variables useful in observing, predicting, and influencing organizational behavior. Students develop ways of thinking about organizational problems to increase their effectiveness as administrators.

MG 302 Production and Operations Management

Credits: 3
Prerequisites: MGQ 301, junior standing in the School of Management
Corequisites: None
Type: LEC
Introduces the process, tools, and techniques of production and operations management. Develops sufficient skills in the use of financial, quantitative, statistical, and computer-based tools and techniques as they apply to operations management and control problems in business, industrial, service, and governmental settings.

MG 303 Communication for Accountants

Credits: 1
Prerequisites: Acceptance to accounting major
Corequisites: None
Type: LEC
Focuses on developing the practical skills necessary to prepare and deliver effective oral and written communications. Improves writing and speaking in a business context. Emphasizes expectations for speaking and writing within the accounting profession.

MG 304 Service Operations & Extreme Events Management

Credits: 3
Prerequisites: MGQ 301
Corequisites: None
Type: LEC
This course imparts an understanding of service operations management. The service sector is the largest sector in terms of contributions to GDP as well as employment. This course is designed to cover unique aspects of service operations and complexities involved in a wide range of service organizations such as health care, education, retail, government, and non-profit organizations. The planning and control mechanisms for a variety of service situations, and ways and means to lower the costs, improve the efficiency and customer service organizations will be analyzed through many quantitative models such as queuing theory, design of service delivery systems and qualitative methods. In addition, given the growing turbulence in social and economic spheres in recent years, additional emphasis is placed on service business processes involved in emergency management systems, extreme events and rapid execution of service logistics processes. These include the four sectors of: 1) management of organizations such as fire, health care, police protection; 2) disaster management techniques (hurricanes, earthquakes, and other natural events), 3) emergency response to unanticipated shortages of critical materials such as blood, vaccines; and 4) handling and transportation of toxic materials, etc.

MG 305 Management Accounting

Credits: 3
Prerequisites: MGA 201 MGA 202, junior standing
Corequisites: None
Type: LEC
Involves management accounting for non-accounting majors that includes cost estimation, budgeting, performance evaluation, transfer pricing, product-cost systems, and analysis of investment decision making.

MG 306 Financial Reporting and Analysis

Credits: 3
Prerequisites: MGA 201 MGA 202, junior standing
Corequisites: None
Type: LEC
Intermediate course in financial accounting for non-accounting majors that includes the format and content of financial statements, currently accepted accounting principles, problems in disclosure and income measurement, and analysis of financial statements.

MG 311 Accounting Systems

Credits: 3
Prerequisites: MGA 201-MGA 202 with minimum grades of B, junior standing in accounting; completion of or concurrent registration in MGS 351 recommended
Corequisites: None
Type: LEC
Examines the accounting systems—both manual and computer based—for service, merchandising, and manufacturing firms. Emphasizes source documents, internal control, flowcharting, and information provided to management.

MG 314 Cost Accounting

Credits: 3
Prerequisites: MGA 301 or MGA 311, junior standing in accounting
Corequisites: None
Type: LEC
Examines the principles of management accounting used in reporting to management concerning cost measurement, behavior, and classifications; product and service costing systems; and budgeting and performance evaluation.

MG 314 Applied Business Programming

Credits: 4
Prerequisites: MGS 351, senior standing in the School of Management
Corequisites: None
Type: LEC/REC
An introductory programming course with an emphasis on business applications and problem solving. Students will learn object oriented design techniques, programming structures, programming logic and user interface design. The software development environment used in this course is Microsoft Visual Studio and the Visual Basic .NET programming language.
MGO 330 Entrepreneurship and Small Business

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Entrepreneurial ventures are unique entities. They take on the character of their originator who seeks to make his/her mark in the business world. Founders provide the essence of what their venture becomes. Students develop their entrepreneurial instinct as well as entrepreneurial skills. This interaction of instinct and skills assists professional growth and sharpens entrepreneurial "sense." Lecture, discussion, and activities occupy class time. Explores both text and lecture content to provide insight into the components and interactions of business elements. In large part, examines course content in pursuit of the development of a business plan.

MGS 351 Introduction to Management Information Systems

Credits: 4
Prerequisites: MGQ 201, junior standing in the School of Management
Corequisites: None
Type: LEC/LAB

Introduces the basic concepts of management information systems from the managerial perspective. Topics include systems theory, information theory, systems analysis, and database management. Also introduces computer software, such as Lotus 1-2-3 and Microsoft Access.

MGA 401 Internal Auditing

Credits: 3
Prerequisites: MGA 301 and MGA 302 and MGA 311 with a minimum grade of C in each, MGA 314, and senior standing in accounting
Corequisites: None
Type: LEC

Introduces students to the field of internal auditing. Provides students with basic knowledge of internal auditing principles and practices through classroom lectures, individual case exercises, group exercises simulating internal auditing situations, and interaction with internal auditing professionals.

MGT 401 Public Policy, Law and Management

Credits: 3
Prerequisites: junior or senior standing in the School of Management
Corequisites: None
Type: LEC

Focuses on the regulatory and policy implications of the interaction between government and private business entities, including corporations, partnerships and other business forms. Designed to help students understand the legal environment in which business organizations operate. This course also examines the role of ethics in business decision-making and the distinction between ethical and legal constraints. Includes discussion of specific laws affecting business and management, including securities regulation, antitrust statutes, and the Sarbanes-Oxley legislation of 2002.

MGF 401 Financial Institutions

Credits: 3
Prerequisites: MGF 301, junior standing in the School of Management
Corequisites: None
Type: LEC

Analyzes the economic functions and operations of commercial banks and related institutions in the United States and abroad.

MGA 402 Auditing

Credits: 3
Prerequisites: MGA 301 and MGA 302 with a minimum grade of C in each, MGE 302, MGF 301, senior standing in accounting
Corequisites: None
Type: LEC

Covers scope and limitation of audits, auditors' qualifications and responsibilities, methods of verification and analysis applied to asset and equity accounts, examination of operating data and systems, expressions of opinion related to financial statements, and auditor's legal liability.

MGF 402 Investment Management

Credits: 3
Prerequisites: MGS 351, senior standing in the School of Management
Corequisites: None
Type: LEC

Introduces students to telecommunications technology. Students gain an appreciation for telecommunications technology, such as fax, telephone, and radio, as well as the management of telecommunications and the services planned by telecommunication companies. Students learn to identify major components of local area networks (LAN) and wide area networks (WAN), and to understand issues relating to design of LANs and administration of network operating systems.

MGE 402 Telecommunications Technology

Credits: 3
Prerequisites: MGE 301, senior standing in the School of Management
Corequisites: None
Type: LEC

Introduces computer software, such as Lotus 1-2-3 and Microsoft Access.

MGA 404 Advanced Financial Accounting

Credits: 3
Prerequisites: MGA 301 and MGA 302 and MGA 311 with a minimum grade of C in each, MGF 301, senior standing in accounting
Corequisites: None
Type: LEC

Surveys general management processes for planning and controlling the operations of the firm. Gives special attention to the strategic and operations planning process, and the integration of marketing, production, and financial planning with it. Case studies and a computer-based management game are part of the course.

MGM 403 Telecommunications Technology

Credits: 3
Prerequisites: MGM 301, senior standing in the School of Management
Corequisites: None
Type: LEC

Investigates marketing research as a tool of market management. Analyzes the role of research in planning and controlling market activities and the techniques of marketing research, and illustrates the application to marketing problems.

MGT 403 Business Law I

Credits: 3
Prerequisites: junior or senior standing in the accounting program
Corequisites: None
Type: LEC

Analyzes major legal issues in business decision-making, including contracts, product liability, law of business organizations, and government regulation of business.

MGM 403 International Financial Management

Credits: 3
Prerequisites: MGF 301, junior standing in the School of Management
Corequisites: None
Type: LEC

Provides the conceptual framework necessary for financial decision making in an international context. Focuses on implementing analytical tools and theory through problems and analysis of real-world global decision making. From this global perspective, explores the following traditional areas of corporate finance: working capital management, capital budgeting, cost of capital and financial structure, and evaluation and control of operations. Within these areas, we concentrate on those decision variables that purely domestic firms tend to overlook, such as fluctuating exchange rates, differing rates of inflation between countries, differing tax systems, multiple money markets, exchange controls, segmented capital markets, and such political risks as nationalization and expropriation.

MGA 404 Fundamentals of Strategic Management

Credits: 3
Prerequisites: MGA 301, MGM 301, MGM 302, completion of or concurrent registration in MGE 302, senior standing in the School of Management
Corequisites: None
Type: LEC

Discusses techniques of analyzing various companies and industries, as well as recent research on security markets, portfolio theory, and the measurements of investment performance.

MGA 402 Federal and State Taxes

Credits: 3
Prerequisites: MGA 301 and MGA 302 and MGA 311 with a minimum grade of C in each, senior standing in accounting
Corequisites: None
Type: LEC

Examines federal and New York State income tax laws as they apply to individuals. Also, provides an overview of corporate tax provisions and income tax treatment of partners and partnerships.

MGO 401 Public Policy, Law and Management

Credits: 3
Prerequisites: junior or senior standing in the School of Management
Corequisites: None
Type: LEC

Focuses on the regulatory and policy implications of the interaction between government and private business entities, including corporations, partnerships and other business forms. Designed to help students understand the legal environment in which business organizations operate. This course also examines the role of ethics in business decision-making and the distinction between ethical and legal constraints. Includes discussion of specific laws affecting business and management, including securities regulation, antitrust statutes, and the Sarbanes-Oxley legislation of 2002.

MFA 401 Financial Institutions

Credits: 3
Prerequisites: MGF 301, junior standing in the School of Management
Corequisites: None
Type: LEC

Analyzes the economic functions and operations of commercial banks and related institutions in the United States and abroad.

MGA 402 Auditing

Credits: 3
Prerequisites: MGA 301 and MGA 302 with a minimum grade of C in each, MGE 302, MGF 301, senior standing in accounting
Corequisites: None
Type: LEC

Covers scope and limitation of audits, auditors' qualifications and responsibilities, methods of verification and analysis applied to asset and equity accounts, examination of operating data and systems, expressions of opinion related to financial statements, and auditor's legal liability.

MGF 402 Investment Management

Credits: 3
Prerequisites: MGS 351, senior standing in the School of Management
Corequisites: None
Type: LEC

Introduces students to telecommunications technology. Students gain an appreciation for telecommunications technology, such as fax, telephone, and radio, as well as the management of telecommunications and the services planned by telecommunication companies. Students learn to identify major components of local area networks (LAN) and wide area networks (WAN), and to understand issues relating to design of LANs and administration of network operating systems.

MGE 402 Telecommunications Technology

Credits: 3
Prerequisites: MGE 301, senior standing in the School of Management
Corequisites: None
Type: LEC

Introduces computer software, such as Lotus 1-2-3 and Microsoft Access.

MGA 404 Advanced Financial Accounting

Credits: 3
Prerequisites: MGA 301 and MGA 302 and MGA 311 with a minimum grade of C in each, MGF 301, senior standing in accounting
Corequisites: None
Type: LEC

Surveys general management processes for planning and controlling the operations of the firm. Gives special attention to the strategic and operations planning process, and the integration of marketing, production, and financial planning with it. Case studies and a computer-based management game are part of the course.

MGM 403 Marketing Research

Credits: 3
Prerequisites: MGM 301, senior standing in the School of Management
Corequisites: None
Type: LEC

Investigates marketing research as a tool of market management. Analyzes the role of research in planning and controlling market activities and the techniques of marketing research, and illustrates the application to marketing problems.

MGT 403 Business Law I

Credits: 3
Prerequisites: junior or senior standing in the accounting program
Corequisites: None
Type: LEC

Analyzes major legal issues in business decision-making, including contracts, product liability, law of business organizations, and government regulation of business.

MGM 403 International Financial Management

Credits: 3
Prerequisites: MGF 301, junior standing in the School of Management
Corequisites: None
Type: LEC

Provides the conceptual framework necessary for financial decision making in an international context. Focuses on implementing analytical tools and theory through problems and analysis of real-world global decision making. From this global perspective, explores the following traditional areas of corporate finance: working capital management, capital budgeting, cost of capital and financial structure, and evaluation and control of operations. Within these areas, we concentrate on those decision variables that purely domestic firms tend to overlook, such as fluctuating exchange rates, differing rates of inflation between countries, differing tax systems, multiple money markets, exchange controls, segmented capital markets, and such political risks as nationalization and expropriation.

MGA 404 Fundamentals of Strategic Management

Credits: 3
Prerequisites: MGA 301, MGM 301, MGM 302, completion of or concurrent registration in MGE 302, senior standing in the School of Management
Corequisites: None
Type: LEC

Discusses techniques of analyzing various companies and industries, as well as recent research on security markets, portfolio theory, and the measurements of investment performance.

MGA 402 Federal and State Taxes

Credits: 3
Prerequisites: MGA 301 and MGA 302 and MGA 311 with a minimum grade of C in each, senior standing in accounting
Corequisites: None
Type: LEC

Examines federal and New York State income tax laws as they apply to individuals. Also, provides an overview of corporate tax provisions and income tax treatment of partners and partnerships.

MGO 401 Public Policy, Law and Management

Credits: 3
Prerequisites: junior or senior standing in the School of Management
Corequisites: None
Type: LEC

Focuses on the regulatory and policy implications of the interaction between government and private business entities, including corporations, partnerships and other business forms. Designed to help students understand the legal environment in which business organizations operate. This course also examines the role of ethics in business decision-making and the distinction between ethical and legal constraints. Includes discussion of specific laws affecting business and management, including securities regulation, antitrust statutes, and the Sarbanes-Oxley legislation of 2002.
Credits: 3
Prerequisites: MGM 301, junior standing in the School of Management
Corequisites: None
Type: LEC
Discusses pertinent theoretical and empirical findings about the behavior of consumers and industrial and institutional buyers.

MGS 404 Database Management Systems
Credits: 3
Prerequisites: MGS 351, senior standing in the School of Management
Corequisites: None
Type: LEC
Introduces the technologies used to develop and implement database systems. The course begins by introducing the relational model and the structure query language (SQL), and also examines post-relational models as found in object-oriented and semantic databases. Uses data modeling concepts and principles of good database design to illustrate the construction of integrated databases. Requires students to complete a project that incorporates good database design concepts.

MGT 404 Business Law II
Credits: 3
Prerequisites: MGT 403, junior or senior standing in the accounting program
Corequisites: None
Type: LEC
Studies the Uniform Commercial Code, bankruptcy, property law, and other commercial law topics.

MGF 405 Advanced Corporate Finance
Credits: 3
Prerequisites: MGF 301, MQG 301, junior standing in the School of Management
Corequisites: None
Type: LEC
Studies the Uniform Commercial Code, bankruptcy, property law, and other commercial law topics.

MGS 405 Seminar in Marketing
Credits: 3
Prerequisites: MGM 301, junior standing in the School of Management
Corequisites: None
Type: SEM
Provides an opportunity to study individual topics of special interest, as well as to examine market phenomena of a general nature.

MGS 405 Systems Analysis and Design
Credits: 3
Prerequisites: CSE 113, MGS 351, senior standing in the School of Management
Corequisites: None
Type: LEC
Introduces students to the various concepts and technologies used in the analysis and design of computer-based systems. The course introduces techniques for studying business information flows, defining information requirements, and designing and implementing computer-based solutions. Also surveys modern software development practices and such methods as rapid applications development and prototyping, and the use of automated tools to support software development.

MG 406 Product and Brand Management
Credits: 3
Prerequisites: MGM 301, junior standing in the School of Management
Corequisites: None
Type: LEC
Discusses new product development, brand and pricing strategies for existing products, and the design of promotional campaigns. Gives particular emphasis to the new product development process and the design of advertising strategy.

MGF 407 Financial Derivatives and Their Markets
Credits: 3
Prerequisites: MGF 301, concurrent registration or prior completion (strongly recommended) of MGF 402, senior standing in the School of Management
Corequisites: None
Type: LEC
Introduces the technologies used to develop and implement database systems. The course begins by introducing the relational model and the structure query language (SQL), and also examines post-relational models as found in object-oriented and semantic databases. Uses data modeling concepts and principles of good database design to illustrate the construction of integrated databases. Requires students to complete a project that incorporates good database design concepts.

MGM 409 Advertising and Promotion
Credits: 3
Prerequisites: MGM 301, junior standing in the School of Management
Corequisites: None
Type: LEC
Promotional strategy, one of the four P’s of marketing, is critical to the survival and success of organizations because promotion forms the point of contact between the organization and its many stakeholders, especially its customers. While promotion is typically associated with advertising, today’s marketers have many more options in fashioning their promotional strategies. Understanding the various promotional choices including advertising, sales promotions, direct marketing, personal selling, and public relations and how these strategies need to work in tandem to achieve the greatest impact are among the objectives of this course.

MGA 410 Information Systems Audit
Credits: 3
Prerequisites: MGA 311; MGA 401 or MGA 402; or permission of instructor
Corequisites: None
Type: LEC
Introduces the technologies used to develop and implement database systems. The course begins by introducing the relational model and the structure query language (SQL), and also examines post-relational models as found in object-oriented and semantic databases. Uses data modeling concepts and principles of good database design to illustrate the construction of integrated databases. Requires students to complete a project that incorporates good database design concepts.

MGB 421 Seminar in Organization and Administration
Credits: 3
Prerequisites: MGM 301, junior standing in the School of Management
Corequisites: None
Type: SEM
Focus varies from comparison of different approaches to organizational analysis to in-depth studies of specialized topics of field studies of organizations. Involves systematic development of knowledge about organizational behavior and implications for management practice. Offered infrequently.

MGT 422 Management, Society, and the Environment
Credits: 3
Prerequisites: junior standing in the School of Management
Corequisites: None
Type: SEM
Various topics of concern to management students are offered periodically by guest lecturers and faculty members. Not offered on a regular basis.
MGB 422 Seminar in Organization and Administration

Credits: 3
Prerequisites: MGB 301, junior standing in the School of Management
Corequisites: None
Type: LEC
Focus varies from comparison of different approaches to organizational analysis to in-depth studies of specialized topics of field studies of organizations. Involves systematic development of knowledge about organizational behavior and implications for management practice. Offered infrequently.

MGS 425 Management of IT Projects

Credits: 3
Prerequisites: CSE 113, MGS 314, MGS 351, MGS 404
Corequisites: MGS 405
Type: LEC
Examines the nature of power and influence, the acquisition of power, and its use in organizations, utilizing tools from organizational theory. Analyzes major frameworks from the social and behavioral sciences and delineates their utility for application. Discusses cases and other exercises for application in both the public and the private sectors. Students are encouraged to relate the material to their personal experiences and professional objectives.

MGI 441 Collective Bargaining

Credits: 3
Prerequisites: MGI 301, junior standing in the School of Management
Corequisites: None
Type: LEC
Surveys collective bargaining in the United States. Topics covered include the nature and significance of collective bargaining, procedures of collective bargaining, bargaining issues, and contract administration.

MGA 449 Internal Audit Practicum

Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Provides students with an opportunity to apply classroom theories to real-life situations. Students choose their own placement from a listing available from the Internship Program Office. The placement process is similar to that of a job search. Thus, students have the opportunity to send their resumes to sites of their choosing and interview for placement. Each site assigns a specific project to the student to be completed within 150 hours during the course of the semester. Accounting students work under the supervision of an accounting professional and receive exposure to the day-to-day operations within a professional setting.

MGO 450 Business Forecasting

Credits: 3
Prerequisites: MGGQ 301 and MGE 302
Corequisites: None
Type: LEC
Examines forecasting for business purposes in the fact of uncertainty. Designed to familiarize students with various forecasting techniques and their practical applications in business, including projections of retail sales, real estate loans, tool shipments, costs, revenues, stock prices, inflation rates, and other micro and macro level variables. Numerous case studies were used.

MGF 483 International Marketing

Credits: 3
Prerequisites: MGF 301, junior standing in the School of Management
Corequisites: None
Type: LEC
As the world becomes a global village, and more corporations around the world market their products and services in foreign countries, the demand for business students with an understanding of international marketing is dramatically increasing. Thus, it becomes increasingly critical for undergraduate marketing students to: (1) develop an understanding of the concepts, principles, and practices of marketing in the global environment; (2) develop familiarity with the problems involved in marketing across national boundaries; and (3) gain knowledge of tools and approaches to develop and control marketing programs on a global basis.

MGO 493 Special Topics

Credits: 3
Prerequisites: Junior standing in the Business Administration major
Corequisites: None
Type: LEC
Various topics of concern to management students are offered periodically by guest lecturers and faculty members. Not offered on a regular basis.

MGG 495 Undergraduate Supervised Teaching

Credits: 1
Prerequisites: senior standing in management
Corequisites: None
Type: TUT
Undergraduate teaching assistant (UTA) positions for MGG 101 and MGG 102 are available for School of Management Students who meet the qualifications, including senior standing, a minimum GPA of 3.0, and a minimum School of Management GPA of 3.0. Students must apply for UTA positions with the Undergraduate Academic Programs office in 204 Alfiero Center. Credit does not count toward the major. Graded P/F.

MGG 496 Internship

Credits: 3
Prerequisites: senior standing in management
Corequisites: None
Type: TUT
Provides students with an opportunity to apply classroom theories to real-life situations. Students choose their own placement from a listing available from the Internship Program Office. The placement process is similar to that of a job search. Students have the opportunity to send their resumes to sites of their choosing and to interview for placement. Each site assigns a specific project to the student to be completed within 150 hours during the course of the semester. Marketing students work under the supervision of a marketing professional and receive exposure to the day-to-day operations within a professional setting.

MGT 496 Internship

Credits: 3
Prerequisites: senior standing in general management
Corequisites: None
Type: TUT
Provides students with an opportunity to apply classroom theories to real-life situations. Students choose their own placement from a listing available from the Internship Program Office. The placement process is similar to that of a job search. Students have the opportunity to send their resumes to sites of their choosing and interview for placement. Each site assigns a specific project to the student to be completed within the 150 hours during the course of the semester. General management students work under the supervision of a general management professional and receive exposure to the day-to-day operations within a professional setting.

MGI 496 Human Resources Practicum

Credits: 3
Prerequisites: senior standing in human resources management or industrial relations
Corequisites: None
Type: TUT
Provides students with an opportunity to apply classroom theories to real-life situations. Students choose their own placements from a listing available from the Internship Program Office. The placement process is similar to that of a job search. Students have the opportunity to send their resumes to sites of their choosing and interview for placement. Each site assigns a specific project to the student to be completed within 150 hours during the course of the semester. Human resources management students work under the supervision of a human resources professional and receive exposure to the day-to-day operations within a professional setting.
MGA 496 Accounting Practicum
Credits: 3
Prerequisites: senior standing in accounting
Corequisites: None
Type: TUT
Provides students with an opportunity to apply classroom theories to real-life situations. Students choose their own placement from a listing available from the Internship Program Office. The placement process is similar to that of a job search. Thus, students have the opportunity to send their resumes to sites of their choosing and interview for placement. Each site assigns a specific project to the student to be completed within 150 hours during the course of the semester. Accounting students work under the supervision of an accounting professional and receive exposure to the day-to-day operations within a professional setting.

MGB 499 Independent Study
Credits: 1
Prerequisites: Permission of instructor and department chair, senior standing in accounting
Corequisites: None
Type: TUT
Instructional and practical experience in the skills and techniques of research through association with a faculty member actively engaged in research. Credit up to 6 hours, depending on the type and amount of research activity. May be taken for credit more than once.

MGG 499 Independent Study
Credits: 1
Prerequisites: senior standing in accounting, permission of instructor and department chair
Corequisites: None
Type: TUT
Instructional and practical experience in the skills and techniques of research through association with a faculty member actively engaged in research. Credit up to 6 hours, depending on the type and amount of research activity. May be taken for credit more than once.

MGS 499 Independent Study
Credits: 1
Prerequisites: senior standing in accounting, permission of instructor and department chair
Corequisites: None
Type: TUT
Instructional and practical experience in the skills and techniques of research through association with a faculty member actively engaged in research. Credit up to 6 hours, depending on the type and amount of research activity. May be taken for credit more than once.

MGO 499 Independent Study
Credits: 1
Prerequisites: senior standing in accounting, permission of instructor and department chair
Corequisites: None
Type: TUT
Instructional and practical experience in the skills and techniques of research through association with a faculty member actively engaged in research. Credit up to 6 hours, depending on the type and amount of research activity. May be taken for credit more than once.

Chemical Engineering

CE 100 Special Topics
Credits: 3
Prerequisites: Permission of director of undergraduate studies
Corequisites: None
Type: LEC
Topics in the field of specialization selected with the permission of the instructor.

CE 200 Special Topics
Credits: 3
Prerequisites: Permission of director of undergraduate studies
Corequisites: None
Type: LEC
Topics in the field of specialization selected with the permission of the instructor.

CE 212 Fundamental Principles of Chemical Engineering
Credits: 4
Prerequisites: CHE 108, MTH 142, PHY 107
Corequisites: None
Type: LEC/REC
Integrates fundamentals of mathematics, physics, and chemistry into chemical engineering concepts; laws of conservation of mass and energy.

CE 300 Special Topics
Credits: 3
Prerequisites: Permission of director of undergraduate studies
Corequisites: None
Type: LEC
Topics in the field of specialization selected with the permission of the instructor.

CE 304 Chemical Engineering Thermodynamics
Credits: 4
Prerequisites: CE 212, MTH 241
Corequisites: None
Type: LEC/REC
Applies the laws and tools of equilibrium thermodynamics to chemical engineering problems, including calculation of thermodynamic properties of pure fluids and mixtures, computation of energy requirements for changing the state of a system, analysis of phase equilibria (emphasizing vapor-liquid equilibrium), and treatment of chemical reaction equilibria.

CE 307 Chemical Engineering Design I
Credits: 3
Prerequisites: CE 212, MTH 306
Corequisites: None
Type: LEC
Introduces process control: mathematical modeling of simple systems, dynamic response, feedback control, stability, engineering economics: investment and profitability, cost estimation, optimization.
CE 317 Transport Processes I
Credits: 4
Prerequisites: MTH 241, MTH 306
Corequisites: CE 212, CE 327
Type: LEC/REC
Introduces fluid statics and dynamics with examples from chemical engineering operations. Applies macroscopic mass, energy, and momentum balances to fluid flow problems. Dimensional analysis and correlation of turbulent flow data. Theories of turbulence. The Navier-Stokes equations, momentum transport and velocity profiles in one-dimensional laminar flow, boundary layers, and potential flow.

CE 318 Transport Processes II
Credits: 4
Prerequisites: CE 317
Corequisites: CE 328
Type: LEC/REC
The equations of change of heat and mass transport. Steady- and unsteady-state heat conduction in one and two dimensions. Free and forced convection; prediction and correlation of heat transfer. Mass transfer by diffusion and convection; analogies with heat transfer. Simultaneous mass transfer and chemical reaction.

CE 327 Chemical Engineering Laboratory I
Credits: 1
Prerequisites: None
Corequisites: CE 317
Type: LAB/LEC
Accompanies CE 317. Fundamentals of design, execution, analysis, and documentation of engineering experiments. One three-hour laboratory per week or equivalent.

CE 328 Chemical Engineering Laboratory II
Credits: 1
Prerequisites: CE 327
Corequisites: CE 318
Type: LAB/LEC
Accompanies CE 318. Continuation of CE 327.

CE 329 Chemical Engineering Reaction Kinetics
Credits: 3
Prerequisites: MTH 306
Corequisites: CE 212
Type: LEC
Chemical kinetics as applied to the design of chemical reaction equipment. Introduces the theory of reaction rates in homogeneous and heterogeneous systems; experimental methods; analysis of rate data; reactor types and design; selectivity in complex reaction systems.

CE 400 Special Topics
Credits: 3
Prerequisites: Permission of director of undergraduate studies
Corequisites: None
Type: LEC
Topics in the field of specialization selected with the permission of the instructor.

CE 404 Chemical Engineering Product Design
Credits: 4
Prerequisites: CE 318, CE 433
Corequisites: None
Type: LEC/REC
Introduces the general framework for product design and development with molecular structure-property relations, enables students to evaluate the design of existing products and participate in the design of improved and new products.

CE 405 Special Topics
Credits: 3
Prerequisites: Permission of director of undergraduate studies
Corequisites: None
Type: LEC
Topics in the field of specialization selected with the permission of the instructor.

CE 406 Chemical Engineering Projects
Credits: 3
Prerequisites: Permission of director of undergraduate studies
Corequisites: None
Type: TUT
Topics vary year to year, but may include chemical process studies, studies of engineering materials, computer analysis of specific chemical engineering problems. Problems announced in previous semester. Assignments, where possible, follow student preferences and require consent of faculty members who guide the work.

CE 407 Separations
Credits: 3
Prerequisites: None
Corequisites: CE 304, CE 318
Type: LEC
Staged operations of distillation, absorption, leaching, and extraction. Phase equilibria and application of equilibrium data to calculational methods provide knowledge of solution methods and limitations for binary and multicomponent systems.

CE 408 Chemical Engineering Plant Design
Credits: 4
Prerequisites: CE 329, CE 407
Corequisites: None
Type: LEC/REC
Applies chemical engineering principles to the design of chemical plants and process equipment. Preliminary economic evaluations of plants. Process flow sheet development; material and energy balances; equipment specification, fundamentals of engineering economics, and profitability analysis; strategies in process design and synthesis.

CE 410 Molecular Modeling
Credits: 3
Prerequisites: CE 304, CHE 334, or equivalent
Corequisites: None
Type: LEC
Examines chemical and transport phenomena from a microscopic perspective. Topics include molecular simulation, advanced thermodynamics, and statistical mechanics.

CE 420 Rheology of Fluids
Credits: 3
Prerequisites: introductory course in fluid mechanics
Corequisites: None
Type: LEC
Technologies involving rheologically complex liquids; interpretation of rheological anomalies; stress, strain, and rate of deformation; rheological equations of state. Measures rheological parameters; laminar flow of rheologically complex liquids in pipes, stirred tanks, and porous media. Turbulent flow and drag reduction. Heat transfer.

CE 423 Green Engineering for Chemical Engineers
Credits: 3
Prerequisites: senior standing or permission of instructor
Corequisites: None
Type: LEC
Introduces the technological processes of Green Engineering. Discusses pollution problems of manufacturing of ammonia, sulfuric and nitric acids, and fertilizers. Presents an analysis of energy producing units as nuclear and coal-fired powerplants. Describes elimination of exhaust gases in Otto and Diesel engines. New ways of design of chemical, petrochemical and energy producing systems are evaluated based on green chemistry, new solvents and new synthetic pathways. Unit operations are discussed in relation to possible environmental impact. Presents an evaluation of the environmental performance of a flow-sheet.

CE 427 Chemical Engineering Laboratory III
Credits: 1
Prerequisites: CE 318
Corequisites: None
Type: LAB/LEC
Continuation of CE 328.

CE 428 Chemical Engineering Laboratory IV
Credits: 1
Prerequisites: CE 329, CE 427
Corequisites: None
Type: LAB/LEC
A continuation of CE 427.

CE 430 Molecular Modeling
Credits: 3
Prerequisites: CE 304, CHE 334
Corequisites: None
Type: LEC
Examines chemical and transport phenomena from a microscopic perspective. Topics include molecular simulation, advanced thermodynamics, and statistical mechanics.

CE 431 Materials Science and Engineering
Credits: 3
Prerequisites: CHE 320 or CHE 334
Corequisites: None
Type: LEC
Properties of solids, which chemical engineers need to understand and exploit in regard to chemical processing and industrial equipment; how chemical and physical structures determine the uses of the products of the chemical industry. Crystal structure, crystal defects, and how they dominate mechanical properties. Thermal and electrical properties of solids. Polymer structures and properties. Corrosion: mechanisms and prevention.

CE 434 Chemical Systems and Control
Credits: 3
Prerequisites: CE 212, MTH 306
Corequisites: None
Type: LEC
Equips engineering students with the fundamental concepts of process control design. An introduction to the benefits of having a good control process is followed by the definitions of the control objectives, feedback and feedforward control, and the various types of variables found in process control problems. Includes the development of dynamic mathematical models for simple processes, using mass and energy balances. Introduces mathematical tools (Laplace Transformations) that help solve such mathematical models as well as define the transfer functions of typical process systems (first and second order systems). Introduces the controller concept, together with the basic principles behind the feedback control loop and its stability characteristics.

CE 435 Introduction to Polymers
Credits: 3
Prerequisites: senior standing or permission of instructor
Corequisites: None
Type: LEC
Classifies polymers with respect to structure and formation reaction; relations between chemical structure and physical properties; some characteristics of polymer solutions; mechanical behavior; and engineering properties.

CE 442 Engineering and Process Economics
Credits: 3
Prerequisites: senior standing or permission of instructor
Corequisites: None
Type: LEC
Economic aspects of chemical engineering; time value of money, including interest and investments; alternative methods of analysis, such as annual costs, percent, and rate of return; process costs and concepts, including cost estimation, and chemical equipment and plant costs; a small cost-related process design project.
CE 443 Chemical Process Analysis and Synthesis

Credits: 3
Prerequisites: CE 407
Corequisites: CE 408
Type: LEC
Introduces fundamentals of process design utilizing computer techniques and methods.

CE 444 Chemical Process Control

Credits: 3
Prerequisites: senior standing or permission of instructor
Corequisites: None
Type: LEC/LAB
Introduces principles of process control. Feedback, feedforward, and open-loop control. Effects of major controller actions on typical processes: on-off, proportional, integral, and derivative. Predicts the dynamic response of a process through mathematical models. Frequency response analysis; introduces tuning of a system.

CE 446 Biochemical Engineering

Credits: 3
Prerequisites: senior standing or permission of instructor
Corequisites: None
Type: LEC
Significant microbial products, organisms, and substrates; directing microbial activity by random mutation and recombinant DNA; kinetics of growth and product formation; types of fermenters; aeration and agitation; scale-up; sterilization; product separation.

CE 447 Biological Transport and Kinetics

Credits: 3
Prerequisites: BIO 201, BIO 318, CE 329
Corequisites: None
Type: LEC
Discusses the application of biological transport and kinetics principles in normal human physiology, disease states and during treatment. Focuses on selected aspects of the nature of receptor-ligand interactions, cell adhesion mechanics, drug delivery, and biological transport in organs. Topics include experimental methods for measuring receptor-ligand interactions, models for receptor-ligand binding and analysis of real data, methods for measuring and analyzing cell adhesion both in suspension and substrate based assays, cardiovascular fluid mechanics, blood components and blood viscosity measurements, flow in arteries and microcirculation, fahraeus effect, engineering principles for drug delivery including diffusion and convective transport of drugs to organs, pharmacokinetic modeling, drug delivery system design and controlled drug release, transport between blood and tissues, and between kidneys and tumors.

CE 448 Cellular and Molecular Bioengineering

Credits: 3
Prerequisites: senior standing or permission of instructor
Corequisites: None
Type: LEC
Introduces biomedical engineering with emphasis on vascular engineering. Gives students an understanding of how quantitative approaches can be combined with biological information to advance knowledge in the areas of thrombosis, inflammation biology and cancer metastasis. Emphasizes cellular and molecular bioengineering methods.

CE 449 Biological Systems Engineering

Credits: 3
Prerequisites: BIO 201, BIO 205, MTH 306, CE 446
Corequisites: None
Type: LEC
Topics include mathematical techniques for optimization, genomics-genome sequencing, genome sequence annotation, metabolic networks, linear and quadratic optimization for metabolic network optimizations, experimental approaches to metabolic network optimization, c-labeling for metabolic flux determination, examples of using such approaches for high value chemical production optimization, background on cell signaling, biochemical/biophysical description of major signaling pathways including techniques for collecting experimental data, strategies for modeling signaling networks, examples of utilizing a mathematical framework to predict (and manipulate) cellular behavior in response to specific stimuli, examples of cell signaling in disease states, background and description of genetic networks, experimental approaches to genetic networks, strategies for modeling genetic networks, examples of describing/predicting genetic network behavior using mathematical tools, and an overview of genomic and proteomic methodologies.

CE 456 Introduction to Aerosol Science

Credits: 3
Prerequisites: senior standing or instructor permission
Corequisites: None
Type: LEC
Introduces aerosol science and technology at a senior undergraduate/beginning graduate level. Provides the knowledge and skills needed to understand and predict the production, transport, and other behavior of aerosols and introduces technologies for producing, measuring, and collecting them.

CE 457 Colloid and Surface Phenomena

Credits: 3
Prerequisites: senior standing or permission of instructor
Corequisites: None
Type: LEC
Dispersed systems (e.g., suspensions, emulsions, foams, and other systems) in which surface effects dominate behavior. Surface tension. Gas adsorption and adsorption from solution. Effects of surface charge. Wetting, detergency, adhesion. Transport processes dominated by surface tension.

CE 459 Special Topics

Credits: 1
Prerequisites: permission of director of undergraduate studies
Corequisites: None
Type: LEC
Topics in the field of specialization selected with the permission of the instructor.

CE 460 Special Topics

Credits: 1
Prerequisites: permission of director of undergraduate studies
Corequisites: None
Type: LEC
Topics in the field of specialization selected with the permission of the instructor.

CE 461 Frontiers of Chemical Technology

Credits: 3
Prerequisites: senior standing or permission of instructor
Corequisites: None
Type: LEC
Exposes students to a broad range of industrial problems and the techniques to solve them using a project-oriented approach.

CE 469 Internship/Practicum

Credits: 3
Prerequisites: Permission of Instructor
Corequisites: None
Type: TUT
Hands-on experience in the field. Problems vary from year to year, and may include chemical process studies, engineering materials studies, or computer-based analysis of specific chemical engineering problems. Internship assignments follow student preferences where possible and require consent of a faculty member who guides the work. Typically, students are required to spend approximately ten unpaid hours per week at an industrial site. Grading is based in part on written and oral reports that are required upon completion of the internship.

CE 497 Departmental Honors Thesis/Project

Credits: 1
Prerequisites: Acceptance into the departmental honors program, permission of instructor
Corequisites: None
Type: TUT
Accepted seniors pursue a specialized, independent study leading to an Honors thesis or project.

CE 498 Undergraduate Research and Creative Activity

Credits: 1
Prerequisites: Permission of Instructor
Corequisites: None
Type: TUT
Students collaborate with faculty research mentors on an ongoing faculty research project or conduct independent research under the guidance of a faculty member. This experience provides students with an inquiry-based learning opportunity and engages them as active learners in a research setting.

CE 499 Independent Study

Credits: 1
Prerequisites: None
Corequisites: None
Type: TUT
Students should be accepted for work on a specific topic by a member of the teaching staff of the chemical engineering department.
Chemistry

CHE 100 Introduction to Chemistry
Credits: 4
Prerequisites: intermediate high school algebra or its equivalent
Corequisites: None
Type: LEC/REC
A one-semester introduction to basic chemistry for high school graduates who are reentering college after a long absence, and for transfer students who are concerned about their readiness for science courses at UB. Also appropriate for students who have had no high school chemistry or who have a weak background in chemistry. Helps prepare students to complete General Chemistry (CHE 101-CHE 102, CHE 105-CHE 106 or CHE 107-CHE 108), emphasizing problem solving. Topics include chemical measurements, properties of atoms and molecules, chemical reactions, chemical calculations, properties of gases, and thermochemistry. Three hours of lecture and two hours of recitation weekly.

CHE 101 General Chemistry
Credits: 5
Prerequisites: high school chemistry and satisfactory performance on the mathematics portion of the SAT or ACT or permission of department
Corequisites: None
Type: LAB/LEC/REC
Introduces fundamental concepts of chemistry, and surveys important chemical elements and their compounds. Three hours of lecture plus one four-hour recitation/laboratory period weekly.

CHE 102 General Chemistry
Credits: 5
Prerequisites: CHE 101
Corequisites: None
Type: LAB/LEC/REC
Introduces fundamental concepts of chemistry, and surveys important chemical elements and their compounds. Three hours of lecture plus one four-hour recitation/laboratory period weekly.

CHE 105 Chemistry: Principles and Applications
Credits: 5
Prerequisites: CHE 105
Corequisites: None
Type: LAB/LEC/REC
Introduces the principles of chemistry and their applications. For students who are interested in majoring in a chemistry-related science. Three hours of lecture plus one four-hour recitation/laboratory period weekly.

CHE 106 General Chemistry for Engineers
Credits: 4
Prerequisites: high school chemistry, satisfactory performance in high school mathematics courses and approved major in the School of Engineering and Applied Sciences
Corequisites: None
Type: LEC/LAB/REC
Introduces fundamental concepts of chemistry, and surveys important chemical elements and their compounds. Three hours of lecture plus one four-hour recitation/laboratory period weekly.

CHE 107 General Chemistry for Engineers
Credits: 4
Prerequisites: high school chemistry, satisfactory performance in high school mathematics courses and approved major in the School of Engineering and Applied Sciences
Corequisites: None
Type: LEC/LAB/REC
Introduces fundamental concepts of chemistry, and surveys important chemical elements and their compounds. Three hours of lecture plus one four-hour recitation/laboratory period weekly.

CHE 108 General Chemistry for Engineers
Credits: 4
Prerequisites: CHE 107
Corequisites: None
Type: LEC/LAB/REC
Introduces fundamental concepts of chemistry, and surveys important chemical elements and their compounds. Three hours of lecture plus one four-hour recitation/laboratory period weekly.

CHE 109 General Chemistry
Credits: 4
Prerequisites: high school chemistry, satisfactory performance on the mathematics portion of the SAT or ACT or permission of department
Corequisites: None
Type: LEC/LAB/REC
Meets the general chemistry requirement for students majoring in a chemistry-related science. Three hours of lecture plus one four-hour recitation/laboratory period weekly.

CHE 110 General Chemistry
Credits: 4
Prerequisites: high school chemistry, satisfactory performance on the mathematics portion of the SAT or ACT or permission of department
Corequisites: None
Type: LEC/LAB/REC
Meets the general chemistry requirement for students majoring in a chemistry-related science. Three hours of lecture plus one four-hour recitation/laboratory period weekly.

CHE 111 General Chemistry
Credits: 4
Prerequisites: None
Corequisites: None
Type: LEC
Consists of the lecture component of CHE 101 without laboratory.

CHE 112 General Chemistry
Credits: 4
Prerequisites: None
Corequisites: None
Type: LEC
Consists of the lecture component of CHE 102 without laboratory.

CHE 113 General Chemistry
Credits: 1
Prerequisites: high school chemistry and satisfactory performance on the mathematics portion of the SAT or ACT or permission of department
Corequisites: None
Type: LEC/REC
Consists of the lecture and recitation components of CHE 101 without lecture.

CHE 114 General Chemistry
Credits: 1
Prerequisites: CHE 111 or CHE 101
Corequisites: None
Type: REC/LAB
Consists of the recitation and lab components of CHE 102 without lecture.

CHE 201 Organic Chemistry
Credits: 5
Prerequisites: CHE 101-CHE 102 or CHE 105-CHE 106 or CHE 107-CHE 108
Corequisites: None
Type: LAB/LEC/REC
Comprehensive survey of major classes of aliphatic and aromatic compounds, emphasizing bonding, reaction mechanisms, stereochemistry, and synthesis. Three hours of lecture and one hour of recitation weekly plus a minimum of three hours of laboratory weekly.

CHE 202 Organic Chemistry
Credits: 5
Prerequisites: CHE 201
Corequisites: None
Type: LAB/LEC/REC
Continuation of CHE 201. Three hours of lecture and one hour of recitation weekly plus a minimum of three hours of laboratory weekly.

CHE 203 Organic Chemistry
Credits: 3
Prerequisites: CHE 101-CHE 102 or CHE 105-CHE 106 or CHE 107-CHE 108
Corequisites: None
Type: LEC
Consists of the lecture component of CHE 201 without laboratory.

CHE 204 Organic Chemistry
Credits: 3
Prerequisites: CHE 201 or CHE 203
Corequisites: None
Type: LEC
Consists of the lecture component of CHE 202 without laboratory.

CHE 205 Introduction to Analytical Chemistry
Credits: 3
Prerequisites: CHE 101-CHE 102 or CHE 105-CHE 106 or CHE 107-CHE 108
Corequisites: None
Type: LEC
Introduces research methods in chemistry under the direction of a chemistry faculty member.

CHE 206 Introduction to Analytical Chemistry Laboratory
Credits: 2
Prerequisites: None
Corequisites: CHE 205
Type: LAB
Surveys laboratory methods and techniques in analytical chemistry. Introduces instrumental analysis.

CHE 251 Contemporary Organic Chemistry
Credits: 5
Prerequisites: CHE 101-CHE 102 or CHE 105-CHE 106 or CHE 107-CHE 108
Corequisites: None
Type: LAB/LEC/REC
For chemistry majors and interested students who are majoring in related sciences. Serves as a small class-setting alternative to CHE 201-CHE 202. Both CHE 251 and CHE 252 provide three hours of lecture and one hour of recitation plus a minimum of three hours of laboratory weekly.

CHE 252 Contemporary Organic Chemistry
Credits: 5
Prerequisites: CHE 251
Corequisites: None
Type: LAB/LEC/REC
For chemistry majors and interested students who are majoring in related sciences. Serves as a small class-setting alternative to CHE 201-CHE 202. Both CHE 251 and CHE 252 provide three hours of lecture and one hour of recitation plus a minimum of three hours of laboratory weekly.

CHE 290 Undergraduate Research
Credits: 1
Prerequisites: CHE 101-CHE 102 or CHE 105-CHE 106 or CHE 107-CHE 108; and permission of instructor
Corequisites: None
Type: LAB
Introduces research methods in chemistry under the direction of a chemistry faculty member.

CHE 291 Undergraduate Research
Credits: 2
Prerequisites: CHE 101-CHE 102 or CHE 105-CHE 106 or CHE 107-CHE 108
Corequisites: None
Type: LAB
Introduces research methods in chemistry under the direction of a chemistry faculty member.

CHE 292 Undergraduate Research
Credits: 3
Prerequisites: CHE 101-CHE 102 or CHE 105-CHE 106 or CHE 107-CHE 108
Corequisites: None
Type: LAB
Introduces research methods in chemistry under the direction of a chemistry faculty member.

CHE 293 Undergraduate Research
Credits: 4
Prerequisites: CHE 101-CHE 102 or CHE 105-CHE 106 or CHE 107-CHE 108
Corequisites: None
Type: LAB
Introduces research methods in chemistry under the direction of a chemistry faculty member.

CHE 294 Undergraduate Research
Credits: 5
Prerequisites: CHE 101-CHE 102 or CHE 105-CHE 106 or CHE 107-CHE 108
Corequisites: None
Type: LAB
Introduces research methods in chemistry under the direction of a chemistry faculty member.
CHE 301 Intermediate Organic Chemistry Lab

Credits: 2
Prerequisites: CHE 201-CHE 202 or CHE 251-CHE 252; or permission of instructor
Corequisites: None
Type: LEC/LAB
This laboratory-based course is designed to prepare the student for independent laboratory research. The experiments will build on knowledge obtained from sophomore organic chemistry. The curriculum integrates techniques, organic synthesis, purification and spectroscopic analysis. Observational skills and record keeping are also emphasized. The lab curriculum includes experiments with the student's data summarized in a formal lab report. Four experiments will be done, emphasizing the importance of metal-catalyzed reactions in modern organic synthesis.

The course has one weekly lecture (required, every week) and two 3-hour lab periods held on alternating weeks. The A lecture goes together with the A labs and the B lecture goes together with the B labs. Section A labs meet on odd-numbered weeks and section B labs meet on even-numbered weeks. The first week of the semester is odd-numbered. If you register for lecture A, you will enroll in either of the two lab sections, A1 or A2. The labs for the A-lecture meet on odd weeks of the semester, weeks 1,3,5,7,9,11,13 and no lab will be held on the even weeks. During the even weeks, you will not meet for lab. More detailed information will be available in the syllabus. The first week of lab is check-in and a technique assignment: section A students, please be sure to bring lab goggles, a combination lock and your lab notebook to the first week of class.

CHE 312 Chemistry of Biological Systems

Credits: 3
Prerequisites: CHE 202 or CHE 252; CHE 319 or CHE 349; or permission of instructor
Corequisites: None
Type: LEC
Develops and integrates chemical principles from sophomore- and junior-level courses into lectures on the structure and function of biological molecules. Emphasizes concepts and methods from the core disciplines of chemistry.

CHE 319 Physical Chemistry

Credits: 3
Prerequisites: CHE 101-CHE 102 or CHE 105-CHE 106 or CHE 107-CHE 108; PHY 107-PHY 108; MTH 141-MTH 142; or permission of instructor
Corequisites: None
Type: LEC
Examines elementary physical chemistry, including chemical thermodynamics, phase equilibria, chemical equilibria, electrochemistry, and chemical kinetics. Introduces chemical bonding, molecular structure, and spectroscopy.

CHE 320 Physical Chemistry

Credits: 3
Prerequisites: CHE 319
Corequisites: None
Type: LEC
Examines elementary physical chemistry, including chemical thermodynamics, phase equilibria, chemical equilibria, electrochemistry, and chemical kinetics. Introduces chemical bonding, molecular structure, and spectroscopy.

CHE 321 Inorganic Chemistry I

Credits: 3
Prerequisites: None
Corequisites: CHE 319 or CHE 349 or permission of instructor
Type: LEC/LAB
Survey chemistry of the elements. Emphasizes atomic and molecular structure, bonding theories, and relevant applications. Three hours of lecture weekly.

CHE 322 Inorganic Chemistry II

Credits: 3
Prerequisites: CHE 321 or permission of instructor
Corequisites: None
Type: LEC/LAB
Consists of a laboratory in the solution of chemical problems, dealing with inorganic and organometallic compounds, by experimental methods.

CHE 329 Physical Chemistry Laboratory I

Credits: 2
Prerequisites: None
Corequisites: CHE 319
Type: LAB
Consists of both laboratory and lecture. Includes techniques for making physical measurements on chemical systems and the statistical treatment of experimental data. Illustrates the theoretical development of physical chemistry given in CHE 304 and CHE 334. Alternates one five-hour laboratory or one two-hour lecture/discussion per week.

CHE 330 Physical Chemistry Laboratory II

Credits: 2
Prerequisites: CHE 319 or permission of instructor
Corequisites: None
Type: LAB
Examines elementary physical chemistry, including chemical thermodynamics, phase equilibria, chemical equilibria, electrochemistry, and chemical kinetics. Introduces chemical bonding, molecular structure, and spectroscopy.

CHE 332 Physical Chemistry Laboratory for Chemical Engineers

Credits: 1
Prerequisites: None
Corequisites: CHE 320 or CHE 334
Type: LAB
Consists of both laboratory and lecture. Includes techniques for making physical measurements on chemical systems and the statistical treatment of experimental data. Illustrates the theoretical development of physical chemistry given in CHE 304 and CHE 334. Alternates one five-hour laboratory or one two-hour lecture/discussion per week.

CHE 334 Physical Chemistry for Chemical Engineers

Credits: 3
Prerequisites: CHE 304; MTH 141-MTH 142; or permission of instructor
Corequisites: None
Type: LEC
Complements CE 304. For chemical engineering majors. Topics include kinetic molecular theory, statistical thermodynamics, reaction rate theory, quantum chemistry, spectroscopy and surface chemistry.

CHE 349 Physical Chemistry for Life Sciences

Credits: 3
Prerequisites: CHE 202 or CHE 252; MTH 122 or MTH 142; or permission of instructor
Corequisites: None
Type: LEC
A one-semester course in physical chemistry covering the same general topics as CHE 319-CHE 320, but in less depth, focusing on applications to biological systems. Three hours of lecture per week.

CHE 350 Physical Chemistry for Life Sciences Laboratory

Credits: 1
Prerequisites: CHE 349
Corequisites: None
Type: LAB
Consists of the laboratory portion of CHE 349.

CHE 376 Introduction to Chemical Literature

Credits: 3
Prerequisites: chemistry major; CHE 202 or CHE 252; CHE 214; CHE 319 or CHE 349; or permission of instructor
Corequisites: None
Type: LEC
Explores sources and techniques of chemical literature use. Technical report writing. Three hours weekly of discussion plus assignments.

CHE 416 Chemical Spectroscopy

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Explores instrumental techniques for chemical analysis, including electrochemistry, theory, and methods of separation, spectroscopic methods.

CHE 414 Instrumental Analysis Laboratory

Credits: 1
Prerequisites: CHE 413
Corequisites: None
Type: LAB
Consists of the laboratory portion of CHE 413.

CHE 423 Advanced Inorganic Chemistry

Credits: 3
Prerequisites: CHE 321; CHE 319 or CHE 349; or permission of instructor
Corequisites: None
Type: LEC
A one-semester introduction to concepts and methods of molecular spectroscopy. Emphasizes the physical principles rather than applications. Subjects include: rotational, vibrational, electronic and nuclear magnetic resonance transitions as measured by microwave, infrared, visible, ultraviolet, Raman (including resonance Raman) and NMR spectroscopies, normal mode analysis, and the principles of Fourier transform methods as applied to NMR and to FTIR (including traditional FTIR based on the Michelson interferometer and to more recently developed time-resolved FTIR for observing very fast chemical processes). Appropriate for upper-level undergraduate chemistry majors and others with a similar chemistry background.

CHE 424 Advanced Organic Chemistry

Credits: 3
Prerequisites: CHE 202 or CHE 252, CHE 319 or CHE 349; or permission of instructor
Corequisites: None
Type: LEC
Consists of advanced topics in organic chemistry, usually including chemical applications of group theory. Three hours of lecture weekly. Not offered every year.

CHE 445 Advanced Organic Chemistry

Credits: 3
Prerequisites: CHE 202 or CHE 252, CHE 319 or CHE 349; or permission of instructor
Corequisites: None
Type: LEC
Consists of selected advanced topics in organic chemistry. Three hours of lecture weekly.
CHE 457 Advanced Physical Chemistry
Credits: 3
Prerequisites: CHE 202 or CHE 252; CHE 319; or permission of instructor
Corequisites: None
Type: LEC
Selected topics, including quantum theory, molecular structure, statistical mechanics, thermodynamics, and chemical kinetics.

CHE 458 Advanced Physical Chemistry
Credits: 3
Prerequisites: CHE 202 or CHE 252; CHE 319; or permission of instructor
Corequisites: None
Type: LEC
Selected topics: quantum theory, molecular structure, statistical mechanics, thermodynamics, chemical kinetics.

CHE 470 Analytical Chemistry of Pollutants
Credits: 2
Prerequisites: CHE 202 or CHE 252; CHE 214, CHE 319 or CHE 349; or permission of instructor
Corequisites: None
Type: LEC/LAB
Involves techniques of sampling, interpretation of data, and instrumentation dealing primarily with trace contaminants in air, water, and soils. Laboratory project required.

CHE 498 Senior Research
Credits: 1
Prerequisites: Senior or junior status in department and permission of instructor
Corequisites: None
Type: TUT
Supervised research under the direction of a chemistry faculty member. May be taken more than one semester.

Chinese

CHE 499 Senior Research
Credits: 4
Prerequisites: CHE 202 or CHE 252; CHE 319; or permission of instructor
Corequisites: None
Type: LEC
Supervised research under the direction of a chemistry faculty member. May be taken more than one semester.

Chinese

CHI 100 Business Chinese: Conversation
Credits: 4
Prerequisites: None
Corequisites: None
Type: LEC
Develops necessary language skills for both business and travel. Little or no knowledge of the Chinese language required. Basics about Chinese culture and business etiquettes are also integrated in the course.

CHI 101 First-Year Chinese
Credits: 5
Prerequisites: CHI 102 or permission of instructor
Corequisites: None
Type: LEC
Basic language skills in speaking, reading, and writing of modern vernacular Chinese. Strongly emphasizes fluency in speaking and reading. Not open to native speakers of Mandarin or those who can read and/or write Chinese characters.

CHI 102 First-Year Chinese
Credits: 5
Prerequisites: CHI 101
Corequisites: None
Type: LEC
Basic language skills in speaking, reading, and writing of modern vernacular Chinese. Strongly emphasizes fluency in speaking and reading. Not open to native speakers of Mandarin or those who can read and/or write Chinese characters.

CHI 104 Transitional First-Year Chinese
Credits: 5
Prerequisites: None
Corequisites: None
Type: LEC
For students who can speak Mandarin or any local dialect of Chinese but have only a little knowledge of reading and writing in Chinese. Students taking this course are not permitted to enroll in CHI 101-CHI 102 and vice versa.

CHI 105 Intensive First Year Chinese
Credits: 10
Prerequisites: None
Corequisites: None
Type: LEC
An intensive course covering both CHI 101 and CHI 102 in one semester. Students taking this course are not permitted to enroll in CHI 104 or CHI 101-CHI 102, and vice versa.

CHI 110 Beginning Business Chinese
Credits: 4
Prerequisites: None
Corequisites: None
Type: LEC
Designed to help students develop basic language skills for both business and travel. No prior knowledge of the Chinese language required. Basics about Chinese culture and business etiquettes are also integrated in the course.

CHI 201 Second-Year Chinese
Credits: 3
Prerequisites: CHI 102 or permission of instructor
Corequisites: None
Type: LEC
Continuation CHI 102. Reading speed is substantially accelerated, and there is oral practice based on the reading materials.

CHI 202 Second-Year Chinese
Credits: 3
Prerequisites: CHI 201 or equivalent
Corequisites: None
Type: LEC
Continuation of CHI 201. Reading speed is substantially accelerated, and there is oral practice based on the reading materials.

CHI 280 Survey of Chinese Culture
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Surveys major cultural and traditional elements that have influenced various aspects of Chinese life. Topics include classical Chinese philosophical ideals, religion, women, family, education, Chinese language and symbolic reference, and literature and art. Taught in English; requires no knowledge of Chinese language.

CHI 301 Third-Year Chinese
Credits: 3
Prerequisites: CHI 202 or permission of instructor
Corequisites: None
Type: LEC
Surveys major cultural and traditional elements that have influenced various aspects of Chinese life. Topics include classical Chinese philosophical ideals, religion, women, family, education, Chinese language and symbolic reference, and literature and art. Taught in English; requires no knowledge of Chinese language.

CHI 311 Masterpieces of Classical Chinese Literature in Translation
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies representative works of classical Chinese literature. Taught in English; requires no knowledge of Chinese language.

CHI 322 Modern Chinese Literature in Translation
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
The history of modern China is a continuous process of political, social, cultural, and intellectual metamorphoses, and modern Chinese literature is a part of and a reflection of these changes. With readings of representative literary works in English translation, the course discusses the birth and development of modern Chinese literature, emphasizing this literature as a mirror of and a moving force for modern China's social, political, cultural, and intellectual changes. Taught in English; requires no knowledge of Chinese language.

CHI 341 Literary Chinese I
Credits: 3
Prerequisites: CHI 202 or equivalent
Corequisites: None
Type: LEC
A reading course on historical, philosophical, and literary works in the literary language of Wényàn by leading men of letters in classical China.

CHI 342 Literary Chinese II
Credits: 3
Prerequisites: CHI 341 or equivalent
Corequisites: None
Type: LEC
A reading course on historical, philosophical, and literary works in the literary language of Wényàn by leading men of letters in classical China.

CHI 371 Business Chinese
Credits: 4
Prerequisites: CHI 202 or equivalent
Corequisites: None
Type: LEC
Emphasizes speaking and listening skills in a business context. Uses reading and writing assignments extensively to enhance students' conversational skills, presentations and classroom discussions. Topics covered include the influence of traditional Chinese culture, such as Confucianism, Taoism, and military strategies, on the Chinese style of business negotiation and etiquette. Students also study current materials concerning China's business and trade organizations, regulations, and practices.
CHI 372 Business Chinese
Credits: 4
Prerequisites: CHI 371 or equivalent
Corequisites: None
Type: LEC
Continuation of CHI 371. Emphasizes speaking and listening skills in a business context. Uses reading and writing assignments extensively to enhance students' conversational skills, presentations and classroom discussions. Topics covered include the influence of traditional Chinese culture, such as Confucianism, Taoism, and military strategies, on the Chinese style of business negotiation and etiquette. Students also study current materials concerning China's business and trade organizations, regulations, and practices.

CHI 380 Chinese Tradition & Guanxi
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Surveys major cultural and traditional elements that have influenced various aspects of contemporary Chinese life. Topics include Chinese philosophical ideals, religion, women, family, education, Chinese language and symbolic reference, literature and art in both traditional and modern China. Taught in English; requires no knowledge of Chinese language.

CHI 401 Readings on Chinese Culture and Customs
Credits: 3
Prerequisites: CHI 302 or equivalent
Corequisites: None
Type: LEC
An advanced vernacular Chinese (Baihua) language course with readings on daily life and customs in China today. In learning the language, students learn how a Chinese person would behave, think, and talk in various situations. Students also study and discuss the differences between Chinese and American social customs and behaviors (all in Chinese, of course). An informative course for a student whose future career may require close contact and association with China.

CHI 430 Special Topics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
May be offered in Chinese, English, or both.

CHI 431 Special Topics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
May be offered in Chinese, English, or both.

CHI 490 Directed Readings in Chinese
Credits: 2
Prerequisites: permission of instructor
Corequisites: None
Type: TUT
Involves readings tailored to the individual needs and interests of students of advanced standing.

CHI 494 Senior Capstone Course
Credits: 3
Prerequisites: None
Corequisites: None
Type: TUT
Course for senior-level majors intended to provide a learning experience that integrates knowledge from lower-level courses. Topics may vary.

CHI 496 Internship/Practicum
Credits: 3
Prerequisites: None
Corequisites: None
Type: TUT
Hands-on experience in language and cultural studies at institutions and organizations in Western New York and/or nationwide.

CHI 498 Undergraduate Research
Credits: 1
Prerequisites: None
Corequisites: None
Type: TUT
Students collaborate with faculty research mentors on an ongoing project or conduct independent research under the guidance of a faculty member. This experience provides students with an inquiry-based learning opportunity and engages them as active learners in a research setting.

CHI 499 Independent Study
Credits: 1
Prerequisites: None
Corequisites: None
Type: TUT
Allows students with some prior knowledge of Chinese to sit in courses, be involved in classroom activities, help tutor students taking lower level Chinese courses and help the instructors with some of the grading.

Civil Engineering

CIE 101 Great Creations of Civil Engineering
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Seeks to develop a basic understanding of the scientific rationale behind the design for large-scale public works, of the urban social context within which such works are funded and built, and of the symbolic meaning of these projects seen as cultural moments and works of art. One lecture per week.

CIE 303 Geodesy, GPS, and GIS
Credits: 3
Prerequisites: MAE 177
Corequisites: None
Type: LEC
Introduces students to spatial concepts that are important in the planning, construction, and operation of civil engineering projects and activities. Introduces the expression of these concepts in graphical language, which is central to civil and architectural communication by first developing some basic skills in CAD. Studies concepts and principles of location and layout of points on the surface of the 3-D earth from both a historical and a modern technology perspective. Also covers the problem of converting the curved surface of the earth onto a plane map or computer screen. Reviews the use of plane concepts for local layouts, along with the circumstances under which 2-D plane concepts can be utilized. Discusses and demonstrates the technological basis for modern measurement and positioning systems, such as DME and GPS. Covers techniques used to identify and lay out land areas in the United States. Introduces GIS.

CIE 308 Engineering Statistics
Credits: 3
Prerequisites: MTH 241
Corequisites: None
Type: LEC/REC
Introduces statistical inference, methods of data analysis, point and interval estimation, tests of hypotheses, correlation and regression, and experiment design. Students may not receive credit for this course and EAS 365.

CIE 323 Structural Engineering I
Credits: 3
Prerequisites: EAS 209, MTH 306
Corequisites: None
Type: LEC/REC
First of a two-course sequence required of all civil engineering students. Basic aspects of structural analysis and design. Introduces structural engineering by an approach that unifies structural behavior, analysis, and design. Emphasizes analysis and design of determinant structures. Topics include analysis of determinant structures, determination of loadings, design criteria, and design of steel members in tension, bending, and compression.

CIE 324 Structural Engineering II
Credits: 3
Prerequisites: CIE 323
Corequisites: None
Type: LEC/REC
Continuation of CIE 323, dealing primarily with analyzing and designing statically indeterminate structures. Topics include deflection calculations using the compatibility and moment distribution methods, an introduction to the stiffness method, and the design of steel beam columns. Introduces students to the use of general purpose structural analysis programs. Major part of the course is devoted to the term design project, which typically involves the modeling, loadings determination, analysis, assessment of safety and preparation of a technical report for an actual structure. Often involves the engineer of record for this structure in the project.

CIE 327 Civil Engineering Materials
Credits: 3
Prerequisites: EAS 209
Corequisites: None
Type: LEC
Mechanical properties of materials. Crystal structure, phase equilibria, deformation behavior under various states of stress. Failure theories, composite materials, prediction of composite material properties based on properties of constituent materials, and concrete mix design. Applications of material technology to building products and design of structural components.

CIE 334 Mechanics of Soils
Credits: 3
Prerequisites: CIE 354, EAS 209
Corequisites: None
Type: LEC/REC
Soil formation and identification. Studies the physical and mechanical properties of granular and cohesive soils. The nature and flow of water in soils, stress distribution, analysis of deformation, and strength of soils. Stress path dependent behavior and consolidation.
CIE 340 Environmental Engineering  
Credits: 3  
Prerequisites: None  
Corequisites: MTH 306  
Type: LEC/REC  
Introduces environmental engineering systems and infrastructure. Covers fundamentals including the application of mass and energy balances and equilibrium chemistry to environmental systems. Applies these concepts to a number of important environmental topics including risk assessment, modeling of water quality systems, water and wastewater treatment facilities, air quality modeling, and municipal and hazardous solid waste management.

CIE 343 Hydraulic Engineering  
Credits: 3  
Prerequisites: CIE 354  
Corequisites: None  
Type: LEC/REC  
Application of fundamentals of fluid mechanics to design systems, including pipe/pump systems, analysis of flow in rivers, and hydrodynamic and aerodynamic forces on structures. Topics include friction losses in pipes, flow measurement, hydraulic machinery, boundary layer characteristics, drag and lift forces, energy and momentum principle in open channel, resistance in open channels, uniform flow, nonuniform flow, surface profile computation, and design of channel controls and transitions.

CIE 354 Fluid Mechanics  
Credits: 3  
Prerequisites: EAS 207, MTH 306  
Corequisites: None  
Type: LEC/REC  
Provides an introductory treatment of the dynamics of fluids, emphasizing incompressible fluids. Develops and applies hydrostatics, thermodynamics, fluid characteristics, kinematics, and dynamics; methods of analysis including the infinitesimal and finite control volume; stress rate-of-strain relations; and basic equations for continuity, energy, motion, and force-momentum. Measurement methods.

CIE 360 Environmental Engineering Laboratory  
Credits: 2  
Prerequisites: CIE 340  
Corequisites: CIE 354 or permission of instructor  
Type: LAB  
Laboratory testing to enhance and extend the student's understanding of the fundamental principles of fluid mechanics and environmental engineering, including modern methods of pollutant analysis. Data are collected and analyzed using statistical and numerical tools. Individual and group reports serve as vehicles for the development of technical communication skills. One 3-hour lab per week or equivalent.

CIE 361 Civil Engineering Laboratory I  
Credits: 2  
Prerequisites: None  
Corequisites: CIE 327, CIE 323, and CIE 354, or permission of instructor  
Type: LAB/LEC  
Laboratory testing to enhance and extend the student's understanding of the fundamental principles of structural analysis, civil engineering materials, and fluid mechanics. One 3-hour lab per week or equivalent.

CIE 362 Civil Engineering Laboratory II  
Credits: 2  
Prerequisites: None  
Corequisites: CIE 334, CIE 340, and CIE 343, or permission of instructor  
Type: LAB/LEC  
Laboratory testing to enhance and extend the student's understanding of the fundamental principles of soil mechanics, hydraulic engineering, and environmental engineering. Continuation of CIE 361. One 3-hour lab per week or equivalent.

CIE 415 Professional Practice Issues  
Credits: 3  
Prerequisites: junior/senior standing in environmental/civil engineering  
Corequisites: None  
Type: LEC  
Ethical issues in civil engineering practice, the professional licensure process, the project life cycle, engineering economics fundamentals, construction contracts and delivery methods, cost estimating fundamentals, project scheduling fundamentals, project control fundamentals.

CIE 423 Structural Engineering III  
Credits: 3  
Prerequisites: CIE 324  
Corequisites: None  
Type: LEC  
Builds upon the knowledge gained in the previous courses (Structures I and II). In this course, advanced structural analysis techniques are taught with direct application to bridges and tall buildings. Topics include fundamentals of the flexibility and stiffness methods; bridge and tall buildings structural systems and design considerations; dynamics of single and multi degree-of-freedom systems; earthquake response spectra; plastic analysis of beams, frames, and plates; stability of structures. Requires a design project that entails either a bridge structural system or a tall building. The project involves developing the structural system, analysis, design, and a final presentation.

CIE 424 Computer-Aided Design in Civil Engineering  
Credits: 3  
Prerequisites: MAE 177, senior standing  
Corequisites: None  
Type: LEC/REC  
Basic principles of interactive computer graphics, computer-aided drafting, 3-D modeling, and visualization in modern CAD systems. The use of modern CAD software as a design tool in civil engineering applications. Overview of trends and futures in computer-aided design. Lecture and hands-on laboratory.

CIE 426 Finite Element Structural Analysis  
Credits: 3  
Prerequisites: senior standing  
Corequisites: None  
Type: LEC  
Comprehensively introduces the finite element method as applied primarily to structural analysis. Presents the foundations of finite elements by addressing the theory of elasticity, calculus of variations, and variational principles of solid mechanics. Subsequently, applies the finite element methodology to trusses, beams, membrane elements, plates, torsion, and axisymmetry. Introduces students to computer programming aspects of the finite element method. Additional topics (time permitting) are dynamics, stability, fluid flow, heat transfer, Galerkin and Ritz methods.

CIE 428 Steel Design  
Credits: 3  
Prerequisites: CIE 324  
Corequisites: None  
Type: LEC  
Emphasizes a theoretical understanding of fundamental concepts in analysis and design of steel structures. Focuses on building structures; topics addressed in the class include materials, probabilistic underpinning of structural steel design, tension members, compression members, beams and beam-columns, welded and bolted connections and analysis and design of steel structures for gravity, wind, and seismic loads.

CIE 429 Reinforced Concrete Design  
Credits: 3  
Prerequisites: CIE 324  
Corequisites: None  
Type: LEC  
The design of reinforced concrete members for flexure, shear and combined flexure, and axial load; anchorage and development of reinforcement; design of connections for monolithic construction; 2-D reinforced concrete elements in shear and bending. Considers the calculation of long- and short-term deformations, as well as the problem of shrinkage; introduces the design of prestressed concrete members.

CIE 430 Design of Wood Structures  
Credits: 3  
Prerequisites: CIE 324  
Corequisites: None  
Type: LEC  
Introduces the properties of wood and its grading process. Presents design principles for members under axial tension, column members, beams under flexure, mechanical connections, and shear walls under lateral loads.

CIE 435 Foundation Engineering  
Credits: 3  
Prerequisites: CIE 334  
Corequisites: None  
Type: LEC  
Applies soil mechanics to engineering problems. Soil exploration and sampling. States of plastic equilibrium, bearing capacity, and settlement of foundations. Foundation design, spread footing, mat, raft, piers, and caissons. Lateral earth pressures, retaining walls, braced excavations, and slope stability.

CIE 437 Pavement Design and Materials  
Credits: 3  
Prerequisites: CIE 334  
Corequisites: None  
Type: LEC  
Design principles of flexible and rigid pavements. Includes a study of soils and paving materials, their interaction, their behavior under various loading conditions, and their ability to perform under all ambient loading conditions. Topics include surface, base, subbase and base courses; bituminous materials, quality control, and flexible and rigid pavement design methods. Laboratory sessions on asphaltic concrete mix design.

CIE 438 Structural Design and Construction of Foundations  
Credits: 3  
Prerequisites: CIE 435  
Corequisites: None  
Type: LEC  
Structural design and construction of foundation systems. Topics include: structural design of shallow foundations, such as single footings, strip footings, and mat foundations; deep foundations, such as piles and caissons; retaining walls; sheet piles; excavation bracings; tie backs; and anchors. An application-oriented design course that requires students to do a real-life project in groups of three from preliminary design stage to final construction phase.
CIE 439 Transportation System Analysis
Credits: 3
Prerequisites: senior standing
Corequisites: None
Type: LEC
Introduces engineering and planning principles applicable to all types of transportation systems; concept and methods of transportation network analysis; operation and management of transportation systems; traffic engineering elements; traffic flow theory; highway capacity analysis; design and application of traffic control devices.

CIE 441 Ecological Engineering
 Credits: 3
Prerequisites: MTH 306
Corequisites: None
Type: LEC
Focuses on the physical, chemical, and hydrodynamic processes governing pollutant fate in natural systems. Topics include mass and energy balances, mixing processes, partitioning processes (exchange with solids and air), and particle removal. Examples from natural systems address lake, river, and atmospheric pollution.

CIE 442 Treatment Process Engineering
Credits: 3
Prerequisites: MTH 306
Corequisites: None
Type: LEC/LAB/REC
Overview of environmental engineering treatment systems analysis and design. Topics include water distribution, water treatment, wastewater collection, wastewater treatment, sludge processing, and industrial waste management.

CIE 444 Hydrologic Engineering
Credits: 3
Prerequisites: CIE 343, EAS 308
Corequisites: None
Type: LEC
Studies the physical processes associated with the components of the hydrologic cycle. Discusses measurement and collection of data. Explores model conceptualization and data analysis for quantification of water flow for design purposes. Emphasizes analysis procedures for surface and groundwater hydrology useful for design of urban facilities. Discusses and applies hydrologic design methods to engineering projects. Emphasizes watershed management concepts.

CIE 445 Groundwater Engineering
Credits: 3
Prerequisites: senior standing
Corequisites: None
Type: LEC
Fundamentals of fluid flow and mass transport in porous media. Derives the governing mass and energy balance equations and develops several commonly applied solutions. Particular topics include groundwater flow under saturated and unsaturated conditions, well hydraulics, introduction to multiphase flow, fundamentals of solute transport, geostatistics, and remediation of contaminated aquifers.

CIE 446 Water Resources Engineering
Credits: 3
Prerequisites: senior standing
Corequisites: None
Type: LEC
Studies and applies modeling, computational analysis, and design procedures for the design of water resources projects. Design projects include stream quality and stream flow, including bridge openings and floodway determination, wastewater collection, and wastewater treatment. Relates the treatment design projects to wastewater stabilization ponds and wastewater treatment plants. Emphasizes watershed management concepts.

CIE 447 Environmental Engineering Practicum
Credits: 3
Prerequisites: senior standing
Corequisites: None
Type: LAB
Student teams conduct studies at the field, pilot, and/or bench scale for the purposes of understanding environmental processes and collection of data needed for design and management decisions. Strongly emphasizes oral and written communication of the study results.

CIE 448 Chemical Principles in Environmental Engineering
Credits: 3
Prerequisites: CIE 340 and senior standing
Corequisites: None
Type: LEC
Presents fundamentals in aquatic chemistry as applied to natural waters, water treatment, and wastewater treatment. Topics include equilibrium concepts, chemical thermodynamics, acid-base reactions, precipitation and dissolution, oxidation and reduction, carbonate system chemistry, and complexation.

CIE 449 Groundwater Engineering Design
Credits: 3
Prerequisites: senior standing
Corequisites: None
Type: LEC
Design of environmental engineering systems, such as water distribution networks; storm and wastewater collection systems; treatment systems for air, water, and wastewater; and hazardous waste site remediation. This is a professional practice-oriented course and includes process engineering principles, system analysis and design, regulations, economics, guest lectures, and field trips. Students work in design teams and produce written and oral reports for a major design project.

CIE 455 Air Pollution
Credits: 3
Prerequisites: permission of instructor
Corequisites: None
Type: LEC
Offered irregularly. The subject matter of the course is announced when offered.

CIE 461 Air Pollution
Credits: 3
Prerequisites: permission of instructor
Corequisites: None
Type: LEC/LAB
Introduces the fundamental aspects of the science and technologies associated with air pollution. Topics include: atmospheric chemistry and basic chemical kinetics; photochemical reactions in the atmosphere; aerosol physics and chemistry; sources of outdoor and indoor air pollution; climatic effects; pollution reduction technologies; gas phase and aerosol measurement and analytical techniques; health effects; atmospheric meteorology; and plume dispersion and transport models.

CIE 465 Special Topics in Geotechnical Engineering
Credits: 3
Prerequisites: CIE 343
Corequisites: None
Type: LEC
Introduces engineering and planning principles applicable to all types of transportation systems; concept and methods of transportation network analysis; operation and management of transportation systems; traffic engineering elements; traffic flow theory; highway capacity analysis; design and application of traffic control devices.

CIE 466 Special Topics in Structural Engineering
Credits: 3
Prerequisites: CIE 324
Corequisites: None
Type: LEC
Develops experience and expertise in the application of structural engineering fundamentals to design of civil engineering projects. Specific technique/problem areas are announced when offered. Requires students to complete homework assignments and hour tests, and they are graded on both. May require an in-depth design exercise.

CIE 467 Special Topics in Environmental Engineering
Credits: 3
Prerequisites: CIE 340, CIE 343
Corequisites: None
Type: LEC
Develops experience and expertise in the application of fundamentals of water resources engineering to design civil engineering projects. Specific technique/problem areas are announced when offered. Requires students to complete homework assignments and hour tests, and they are graded on both. May require an in-depth design exercise.

CIE 468 Special Topics in Geoenvironmental Engineering
Credits: 3
Prerequisites: CIE 435
Corequisites: None
Type: LEC
Develops experience and expertise in the application of fundamentals of geotechnical engineering to design of civil engineering projects. Specific technique/problem areas are announced when offered. Requires students to complete homework assignments and hour tests, and they are graded on both. May require an in-depth design exercise.
CIE 469 Hazardous Waste Management
Credits: 3
Prerequisites: junior/senior standing in engineering or permission of instructor
Corequisites: None
Type: LEC
Focuses primarily on tools for managing industrial hazardous wastes and assessing the impacts of contamination from inactive waste sites. Major topics include site investigation, risk assessment, and exposure modeling. Students also develop a working knowledge of current US hazardous waste regulations and the history and impact of the Love Canal events. Also presents an overview of current site remediation technologies.

CIE 476 Design and Construction of Earth Structures
Credits: 3
Prerequisites: CIE 334
Corequisites: None
Type: LEC
Selection, engineering design, construction, monitoring, and performance evaluation of earth structures. Denudation: soft ground consolidation, deep dynamic compaction; reinforcement: earth-retaining systems, soil nailing, reinforced earth, micropiles; ground improvement by admixtures: grouting, soil mixing techniques.

CIE 479 Independent Study
Credits: 1
Prerequisites: permission of instructor
Corequisites: None
Type: TUT
Students electing this course should be accepted for work on a special topic by a member of the teaching staff. Special forms are available in the department office.

CIE 491 Construction Estimating
Credits: 3
Prerequisites: senior standing
Corequisites: None
Type: LEC
Estimation of construction costs. Topics include project life cycle, financial considerations, order-of-magnitude estimates, the project acquisition decision, material/labor and equipment costs, overhead and profit consideration, building systems estimates, uncertainty, the bidding process, value engineering, and cost control.

CIE 493 Project Management
Credits: 3
Prerequisites: senior standing
Corequisites: None
Type: LEC
Life cycle planning of construction projects; contract types, project delivery strategies; bid packaging, bid evaluation, and selection of contractors; preconstruction planning; contract administration procedures; project quality control; value engineering and management; project site layout; and materials management.

CIE 498 Undergraduate Research and Creative Activity
Credits: 1
Prerequisites: Permission of Instructor
Corequisites: None
Type: TUT
Students collaborate with faculty research mentors on an ongoing project in a faculty member's laboratory or conduct independent research under the guidance of a faculty member. This experience provides students with an inquiry based learning opportunity and engages them as active learners in a research setting.

CL 113 Myth and Religion in the Ancient World
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Provides an introduction to the mythology of the Greeks and Romans. In addition to considering the myths themselves, we study how they have been employed by ancient through contemporary cultures as reflected in areas ranging from religious and social practice to works of art and architecture.

CL 151 Medical Terminology
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
History and structure of scientific terminology; the use of Latin and Greek roots in formation of technical terms in zoology, botany, and medicine.

CL 180 Ancient Sport
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Based on material in translation, the culture of competition in the ancient world: funeral games, celebrating the winners, tragedy, the Olympics and other Greek games, the gymnasion, Roman gladiators, education in Rome, emperors and Roman games, reaction against Roman sport.

GR 101 Ancient Greek Language and Culture I
Credits: 5
Prerequisites: None
Corequisites: None
Type: LEC
Introduces Latin; the reading of simple texts by various Roman authors. Also deals with Roman culture and civilization, and with the influence of Latin in English vocabulary.

GR 102 Latin Language and Culture II
Credits: 5
Prerequisites: LAT 101
Corequisites: None
Type: LEC
Introduces ancient Greek, studying the essential grammar and readings in a variety of simple texts. Also deals with the Greeks' linguistic and historical background, and the cultural milieu in which the great literary and philosophical works were created. Same as RSP 110, RSP 120.

LAT 101 Latin Language and Culture I
Credits: 5
Prerequisites: LAT 101
Corequisites: None
Type: LEC
Introduces Latin; the reading of simple texts by various Roman authors. Also deals with Roman culture and civilization, and with the influence of Latin in English vocabulary.

LAT 102 Latin Language and Culture II
Credits: 5
Prerequisites: LAT 101
Corequisites: None
Type: LEC
Introduces ancient Greek, studying the essential grammar and readings in a variety of simple texts. Also deals with the Greeks' linguistic and historical background, and the cultural milieu in which the great literary and philosophical works were created. Same as RSP 110, RSP 120.

CL 105 Introduction to Ancient Archaeology
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
A broad introduction to the archaeology of ancient Greece and Rome from the Bronze Age to the collapse of the Roman Empire. Gives particular emphasis to examining how archaeologists go about posing and answering questions.
GR 202 Ancient Greek Language and Culture IV

Credits: 3
Prerequisites: GR 201
Corequisites: None
Type: LEC
Advanced work in grammar and composition together with readings from prose and poetry. Includes selections from a wide range of authors in order to demonstrate the diversity and appeal of Greek literature. Emphasizes developing reading ability.

LAT 202 Latin Language and Culture IV

Credits: 3
Prerequisites: LAT 201
Corequisites: None
Type: LEC
Advanced work in Latin grammar with readings from Latin prose and poetry. Includes selections from a wide range of authors in order to demonstrate the richness, diversity, and appeal of Latin literature. Emphasizes developing reading ability.

CL 202 Archaeology and Rediscovery of the Ancient World

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces the material world of Greece and Rome through the study of great archaeological discoveries and archaeologists from the renaissance to the present. Relates the archaeologists and their discoveries to the general development of classical archaeology and the cultural history of the era in which they took place.

CL 205 Heroes

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
The archetype of the hero as it occurs in the psychology of the life cycle, in ancient heroic literature, and in modern popular culture. Readings from Gilgamesh, the Odyssey, the Mahabharata, Beowulf, the Arthurian cycle, and the Bible. Examples from cinema, comic books, etc.

CL 210 Women in the Ancient World

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Explores status of women; roles in literature; their social and economic context; and the origins of contemporary stereotypes and prejudices.

CL 211 Ancient Near East and Egypt

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Topical survey of ancient Near Eastern and Egyptian cultures' contribution to Western history and thought, from the 'invention' of writing to the fall of the Assyrian Empire. Same as HIS 211.

CL 212 Survey of Greek History

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces the political, military, intellectual, and social history of ancient Greece, from the neolithic beginnings to the eastern conquests of Alexander in the fourth century B.C.E.

CL 222 Greek Civilization

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Elements of Greek civilization analyzed from synchronistic and developmental views to produce a coherent image of that culture as a living and expanding entity.

CL 223 Roman Civilization

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Survey of Rome's mythical beginnings to the time of the emperors that covers the full spectrum of Roman cultural expression. Topics covered are not only literature, painting, sculpture, and architecture but also details of everyday life in the Roman world, as well as the roles played by marginal figures (women, slaves, foreigners).

CL 228 Warfare in the Ancient World

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Warfare has been a constant feature of societies and civilizations. Provides a historically anchored survey of warfare in the ancient Mediterranean civilizations, particularly those of Greece and Rome. Not simply a history of strategies and battles, our intent is to look at the wide range of issues influencing and impacted by armed conflict.

CL 235 Early and Medieval Christianity

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Surveys the development of Christianity as a historical and cultural process from its birth until the height of the Middle Ages. Emphasizes the interrelationship among religion, culture, and history; includes monasticism, the role of women, and the place of heresy.

GR 301 Homer and the Greek Epic

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Selections from the Iliad and the Odyssey. Emphasizes improving reading ability.

LAT 301 Ovid

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Selections from the work of Ovid, which includes Metamorphoses, Ars Amatoria, Heroides, Fasti, and other poems. Emphasizes improving reading ability.

CL 302 Archaeology of Assyria

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Traces the history and development of ancient Assyrians' culture; helps students see how individual strains of different cultures - the variegated peoples that make up the ancestry and contemporaries of the historical Assyrians - can be reworked by these ancient peoples to create (or force the creation of) a sense of common heritage; introduces the specific character of the Assyrian Palace and its bureaucracy; improves student skills in analyzing both written text and the visual record of an ancient culture for the purpose of writing history.

LAT 302 Latin Lyric Poetry

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Selections from the Latin lyric poets, from Horace and Catullus to poetry of the early Middle Ages. Emphasizes improving reading ability.

GR 302 Herodotus and Selections from Greek Poetry

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Selections from Herodotus' Histories, and representative Greek poets, such as Sappho, Alcman, and Pindar. Emphasizes improving reading ability.

CL 303 Greece, Egypt, and the Holy Land

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces the primary cultures of the Eastern Mediterranean in the second millennium B.C.E. The course concentrates on the culture of the Egyptian Empire, its external relations with the Levant and the Aegean and the development of the Canaanite and Minoan-Mycenaean civilizations. The instructors are archaeologists whose experience includes Greece, Cyprus, and Syria-Palestine.

CL 305 Greek Intellectual History

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces the development of Greek intellectual life in myth, literature, philosophy, and political thought.

CL 313 Classical Mythology

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Dynamics of mythological thought, especially among the Greeks in relation to Greek religion and philosophy; deployment in literature and art.

CL 315 Epic in Translation

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Readings in translation designed to provide an understanding of the forms and particular visions of the epic genre, especially its Greek and Roman exemplars.

CL 316 Greek Drama in Translation

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies the major dramatic works of Greece (in English translation), the historical, philosophical, and cultural background of Greek drama, as well as its subsequent influence on Western theatre.

CL 319 Classical Topic or Author

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Explores, analyzes, and evaluates chosen subjects, which may be literary, historical, philosophical, etc., or have several subjects. Subject varies from year to year.
CL 331 Roman Imperialism  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Growth and nature of Roman imperialism; Rome's involvement in the Greek East; career of Pompey the Great; foreign policy of Augustus; reign of Trajan.

CL 332 The Athenian Empire  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Athenian Empire of the fifth century B.C.E.; consequences of its policies toward Sparta and Persia.

CL 336 Introduction to Greek Archaeology I  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Remains of the Aegean littoral and their relation to the more advanced civilizations of the Near East, from earliest beginnings to ca. 700 B.C.E.; emphasizes advanced Bronze Age civilizations of Crete and Mycenae.

CL 337 Introduction to Greek Archaeology II  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Surveys architecture, sculpture, and painting from ca. 700 B.C.E. to ca. 350 B.C.E. Traces the development of artistic types, towns, and sanctuaries against the setting of the history, political institutions, and public figures of the times.

CL 338 Introduction to Roman Archaeology I  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Traces the development of Italic culture (early Iron Age, Etruscan, and during the Roman Republic) via avenues ranging from burial practices to urbanism.

CL 339 Introduction to Roman Archaeology II  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Focuses on the Roman Empire from Augustus (d. A.D. 14) to Constantine (d. A.D. 337), considering art, architecture, and archaeology both at home and in the far-flung provinces.

CL 371 The Greek Theatre  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Examines Greek theatre from many perspectives: the surviving plays, both tragedies and comedies; the evidence of the theaters themselves and associated inscriptions; and what ancient authors wrote about theatre. Also considers questions of performance in religious festivals, actors, costumes, and audience. Same as ENG 386, TH 371.

CL 381 Alexander the Great  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Examines the life and world of Alexander the Great, beginning with his father, Philip, and concluding with the division of his kingdom among his lieutenants. Analyzes the sources, both literary and archaeological, for Alexander's life. Same as HIS 386.

LAT 401 Roman Satire  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
For advanced undergraduates. Selections from the Roman satirical writers Horace, Juvenal, and Persius.

LAT 402 Plato  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
For advanced undergraduates. Selections from Plato's dialogues, such as Apology, Crito, Republic, Phaedrus.

LAT 404 Ciceronian Oratory  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
For advanced undergraduates. Slander, murder, and innuendo - great political speeches and courtroom oratory by Cicero, the Roman world's greatest public speaker.

LAT 407 Lucretius and Epicurus  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
For advanced undergraduates. Selections from Lucretius' philosophical epic poem De Rerum Natura, with a discussion of the Greek philosopher Epicurus's influence.

LAT 408 Roman Historians  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
For advanced undergraduates. Selections from Sallust, Livy, Tacitus, Caesar, Cicero, Apuleius, and Petronius.

LAT 409 Classical Latin: Prose Writers  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
For advanced undergraduates. Selections from such writers as Livy, Tacitus, Caesar, Cicero, Apuleius, and Petronius.

LAT 410 Honors Project in Classics  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: TUT  
Seniors only. Consult with chair or director of undergraduate studies during junior year.

LAT 413 Virgil  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
For advanced undergraduates. Readings from Rome's greatest poet, Virgil, including selections from Eclogues, Georgies, and Aeneid.

LAT 414 Silver Latin  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
For advanced undergraduates. Selections from authors from the first century A.D., including Lucan, Petronius, Silius, Iuliculus, Martial, Satius, and others.

CL 422 The Greek City  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
History of the Greek city as a political and social institution with attention to physical environment, economic and agricultural resources, use of urban space, public architecture, and representations of civic ideology.

CL 423 Religion and Society in Ancient Greece  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Analyzes the role of religion in the ancient Greek polis with attention to the archaeological evidence for cult practice, the representation of ritual acts in Greek literature, gender difference and religious ideology, and the ritual of life cycle.

GR 402 Greek Prose  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
For advanced undergraduates. Selections from Herodotus, Thucydides, oratory, the Greek novel, the New Testament.

GR 403 Greek Drama  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Examines four Greek dramatists: Aeschylus, Sophocles, Euripides, and Aristophanes.

GR 407 Greek Prose  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
For advanced undergraduates. Selections could include Plato, Herodotus, Thucydides, oratory, the Greek novel, the New Testament.

GR 426 Lyric Poetry  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
For advanced undergraduates. Greece's great lyric poets, including Sappho, Bacchylides, Alcman, Pindar, selections from Greek Anthology.
CL 426 Archaeology Practicum: Turkey
Credits: 3
Prerequisites: None
Corequisites: None
Type: LAB
Practical experience in field archaeology at the Alishar Regional Project’s excavation at Cadir Hoyuk, Sorgun, Turkey. The major periods studied at Cadir Hoyuk are: the Chalcolithic and its transition to the Early Bronze Period, the end of the Early Bronze and Middle Bronze periods (Assyrian Merchant Colony and Old Hittite Periods), the end of the Hittite Empire, Early Iron age (“Dark Ages”), and the late Byzantine. Field methods will be explained in Turkey and will be practiced on site.

CL 430 Ancient Economy
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines in depth the nature of economic activity in the Greco-Roman world. Places particular emphasis on the employment of general models to understand the ancient economy, and how textual and archaeological evidence has been used to develop and evaluate these models.

CL 440 Pompeii
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Systematic survey of the archaeological remains of the buried city of Pompeii. Uses the unique evidence offered by Pompeii to examine the nature of municipal life in Roman Italy, including society, economy, politics, and private life.

LAT 443 Reading Latin Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
For advanced undergraduates. Topic varies from semester to semester.

LAT 445 Latin Syntax and Stylistics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Engages two distinct, and yet ultimately complimentary tasks: the reading of and stylistics analysis of selected Latin prose texts.

CL 445 Christians in the Roman Empire
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Explores the development of early Christianity in the context of the changing Roman Empire. Begins with the life of Jesus, considering him as a subject of Rome and continuing through the development of Christian communities in the first - third century A.D. Roman Empire.

COM 101 Principles of Communication
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces the study of communication in interpersonal, small-group, organizational, mass, and intercultural contexts; covers basic communication models, theory, and research methods used in communication.

COM 125 Introduction to the Internet
Credits: 3
Prerequisites: COM 101
Corequisites: None
Type: LEC
Introduces the scientific methods used by communication scholars to examine interpersonal, small group, organizational, international/intercultural, telecommunications, and mass communication processes. Introduces students to content analysis, network analysis, social surveys, and experiments, as well as the logic and procedures of scientific inquiry and the use of the library for research.

COM 205 Research Methods
Credits: 3
Prerequisites: COM 101
Corequisites: None
Type: SEM
Examines in depth the nature of economic activity in the Greco-Roman world. Places particular emphasis on the employment of general models to understand the ancient economy, and how textual and archaeological evidence has been used to develop and evaluate these models.

COM 217 Communication in Organizations
Credits: 3
Prerequisites: COM 101
Corequisites: None
Type: LEC
Provides a practical introduction to principles of organizational communication, including basic theories, methods, and applications of organizational communication.

COM 223 Principles and Methods of Interviewing
Credits: 3
Prerequisites: COM 101
Corequisites: None
Type: DIS
Applies communication theory to principles and methods of interviewing; covers the employment interview, the information-gathering interview, and survey research methods.

COM 225 Interpersonal Communication
Credits: 3
Prerequisites: COM 101
Corequisites: None
Type: DIS
Conducts an in-depth analysis of psychological and sociological processes involved in interpersonal communication.

COM 231 Principles of Persuasion
Credits: 3
Prerequisites: COM 101
Corequisites: None
Type: DIS
Examines persuasive communication as a means of achieving goals and objectives. Also considers the theory and practice of influencing attitudes and opinions, particularly within persuasive campaigns.

COM 236 Small-Group Communication
Credits: 3
Prerequisites: COM 101
Corequisites: None
Type: DIS
Explores effective group interaction in task-oriented situations, and considers small-group structures and communication styles that influence the problem-solving process. Involves small-group participation and analysis of group communication.

COM 240 Survey of Mass Communication
Credits: 3
Prerequisites: COM 101
Corequisites: None
Type: LEC
Considers formal organization, functions, and development of mass media; communication as a social process; audience characteristics; structured networks; and communication in bureaucracies.
COM 243 Mass Media and Foreign Policy
Credits: 3
Prerequisites: COM 101, COM 240
Corequisites: None
Type: LEC
This course takes a historical perspective of the media’s role shaping America’s foreign policy, with special emphasis on events 9/11.

COM 244 History of the Media
Credits: 3
Prerequisites: COM 101, COM 240
Corequisites: None
Type: LEC
Social, economic, and historical forces that shape the development of communication media; media as cultural products that affect and are affected by other social institutions.

COM 249 Mass Communication Theory
Credits: 3
Prerequisites: COM 101, COM 240
Corequisites: None
Type: DIS
Models and approaches to the study of the mass media of communication; how the system works, how the audience member interacts with the media.

COM 300 Written Communication
Credits: 3
Prerequisites: writing skills; communication major, COM 101
Corequisites: None
Type: DIS
Covers the theory and practice of written communication; and emphasizes basic writing skills, the relationship between clear writing and clear thinking, and the process of effective writing. Fulfills the writing requirement for the Communication department.

COM 317 Business/Professional Communication
Credits: 3
Prerequisites: communication major, COM 101
Corequisites: None
Type: DIS
Covers basic oral and written communication skills necessary for career planning. Students make presentations, conduct interviews, write business letters and memos, and prepare their own resumes.

COM 326 Public Speaking
Credits: 3
Prerequisites: communication major, COM 101
Corequisites: None
Type: REC
Covers the theory and practice of public speaking, emphasizing effective communication in public meetings and conferences. Provides practice in using parliamentary procedures and presenting speeches.

COM 337 Communication Theory
Credits: 3
Prerequisites: COM 101
Corequisites: None
Type: LEC
Introduces the process of communication, including factors affecting communication and its results, and their relationship to the communicative process.

COM 350 Introduction to the Age of Information
Credits: 3
Prerequisites: COM 101, COM 125
Corequisites: None
Type: LEC
Introduces communication systems made possible by developments in computerization, ranging from satellite systems to computer databases. Examines effects of these communication systems on daily life, and on society in general. Also covers applications of these technologies in business, government, education and science. Topics covered should provide individuals with a foundation for understanding modern communication systems in a variety of professional contexts, or prepare students for further academic study in this area.

COM 353 Communication Ethics
Credits: 3
Prerequisites: COM 101
Corequisites: None
Type: LEC
Addresses issues and information related to the ethical implementation of human communication, especially with regard to the media. The course examines the practice of ethics in different communication contexts, such as advertising, television, business and interpersonal relationships, and health care.

COM 375 Technical Writing
Credits: 3
Prerequisites: COM 101, COM 300
Corequisites: None
Type: SEM
Developing communication expertise is increasingly important in a wide range of professions. This course is intended to prepare aspiring professionals by improving their writing, presentation and critical thought. The main objective of the course is for students to understand the following: the connection between critical thinking and writing; the writing process; using prototyping, an industry standard for document production; and the nature of evidence-based, informative and proposal writing.

COM 380 Health Communication
Credits: 3
Prerequisites: COM 101, COM 217, COM 225, COM 240
Corequisites: None
Type: LEC
Examines health communication and health communication campaigns in the interpersonal, organizational, and mass communication contexts with an emphasis on communication research.

COM 398 Journalism
Credits: 3
Prerequisites: COM 101, COM 240
Corequisites: None
Type: LEC
Development of an understanding of the fundamentals of journalism, with stress on news reporting, copy editing, and basic principles of writing and news preparation for modern print and electronic communications media.

COM 410 Communication in Asia and Pacific Rim Countries
Credits: 3
Prerequisites: COM 101
Corequisites: None
Type: LEC
Provides students with knowledge of communication and its related issues in East Asian and Pacific Rim countries, which are going to be the world’s focal point for economy and politics in the next century.

COM 417 Special Topics in Mass Communication
Credits: 3
Prerequisites: Permission of Instructor, COM 101
Corequisites: None
Type: SEM
Content varies each semester. Topics include television newscasting, mass communication and cultural studies, contemporary media issues, daytime TV/soaps, information systems, and communication technology.

COM 420 Conflict Theory
Credits: 3
Prerequisites: COM 101
Corequisites: None
Type: LEC
Introduces the research literature on conflict and conflict resolution. Focuses primarily on two of the most popular research paradigms - matrix games and bargaining games - although a few other topics are also touched upon.

COM 425 Analysis of Face-to-Face Communication
Credits: 3
Prerequisites: COM 101
Corequisites: None
Type: SEM
Reviews the conduct and practice of social interaction research. Topics include coding schemes, reliability, data collection and analysis, and interpretation of research results.

COM 437 Organizational Communication
Credits: 3
Prerequisites: COM 101, COM 217
Corequisites: None
Type: LEC
Advanced study of the communication process in organizations and systems; theory, open systems; input-output analysis; structural functionalism, cybernetics.

COM 438 Nonverbal Communication
Credits: 3
Prerequisites: COM 101 and COM 205
Corequisites: None
Type: LEC
This lecture based course will examine scientific principles of Nonverbal Communication. Often referred to as body language, this course will approach nonverbal communication from the perspective of the scientist. Students will be asked to critically evaluate research in the field and write a research proposal along with periodic examination.

COM 441 Public Relations
Credits: 3
Prerequisites: COM 101, COM 317; communication major
Corequisites: None
Type: LEC
Studies the role of the public relations practitioner as a specialist in communication, an analyst of public opinion, and a counselor to administrators. Also examines the function of public relations, and internal and external communication.

COM 443 Principles and Techniques of Advertising
Credits: 3
Prerequisites: COM 101, COM 317; communication major
Corequisites: None
Type: LEC
Examines advertising techniques, methods, and evaluation as well as sales promotion.

COM 447 Communication Graphics
Credits: 3
Prerequisites: communication major, COM 101
Corequisites: None
Type: DIS
Examines graphic communication and graphic design skills.

COM 449 Promotional Writing
Credits: 3
Prerequisites: Communication major, COM 101
Corequisites: None
Type: DIS
COM 450 Political Communication
Credits: 3
Prerequisites: COM 101
Corequisites: None
Type: LEC
Studies the role of media and polling in a political campaign. Students combine the theory of political communication and the methodology of polling with practical experience of interacting with political professionals, conducting a poll, and viewing tapes of campaign commercials and speeches/debates.

COM 451 Communication and Marketing
Credits: 3
Prerequisites: Communication major, COM 101
Corequisites: None
Type: LEC
Covers all aspects of the role of communication in the process of marketing goods and services. Specifically, the course covers the design and implementation of marketing information systems, organizational communication within market-driven companies, market research (focus groups, survey, and experimental methods), product design and testing, and the development of communication campaigns, including message design and placement.

COM 452 Analysis of the Media
Credits: 3
Prerequisites: COM 101, COM 240
Corequisites: None
Type: SEM
Analysis of various aspects of electronic and print media.

COM 453 Advanced Public Relations
Credits: 3
Prerequisites: COM 101, COM 441
Corequisites: None
Type: SEM
Provides an opportunity for students to work in-depth on specific projects. Participants design and execute public relations plans which include writing, media placement, speech writing, and evaluation. A good basic understanding of public relations functions and terminology as well as excellent writing skills are musts.

COM 454 Media in the Information Age
Credits: 3
Prerequisites: COM 101, COM 125; COM 398 recommended
Corequisites: None
Type: LEC
Investigates the relationship of new media technologies to the mediated environment at large. Examines the ways in which media institutions, media policy, and media use are changing in an era of increased information exchange.

COM 455 Advanced Advertising
Credits: 3
Prerequisites: COM 101, COM 443
Corequisites: None
Type: SEM
Studies planning, preparation and presentation of comprehensive advertising campaigns. Students team produce all aspects of the campaign from conception to presentation. A good foundation of knowledge of the advertising industry is a must.

COM 460 World Media Systems
Credits: 3
Prerequisites: COM 101, COM 240
Corequisites: None
Type: LEC
Studies world media systems with a comparative analysis approach and from a global perspective. Especially, the course relates many aspects of the world media systems to the current trend of globalization.

COM 462 Media Law
Credits: 3
Prerequisites: COM 101, COM 240
Corequisites: None
Type: LEC
Provides an understanding of the legal system and laws affecting mass communication in the U.S. Students will investigate the history of media law, the reasons for regulatory differences among media, policy issues, and a number of issues including First Amendment rights, defamation, intellectual property rights, and the Fair Use doctrine.

COM 465 PR in the Info Age
Credits: 3
Prerequisites: COM 101, COM 441
Corequisites: None
Type: LEC
This class will introduce students to the ways in which public relations practitioners use the Internet and other new technologies, including e-mail, electronic newsletters, electronic magazines, World Wide Web sites, digital pressrooms, discussion groups, online events, and videoconferences. Students will design public relations plans for clients utilizing these or other new technologies.

COM 468 Special Topics in Mass Communication
Credits: 3
Prerequisites: Permission of Instructor, COM 101
Corequisites: None
Type: SEM
Content varies each semester. Topics include television newscasting, mass communication and cultural studies, contemporary media issues, daytime TV/soaps, information systems, and communication technology.

COM 469 Advanced Research Methods in Communication
Credits: 3
Prerequisites: COM 205, COM 337
Corequisites: None
Type: LEC
Applications oriented course designed to apply various techniques of scientific inquiry towards testing of communication theories. Students apply research methodology ranging from content analysis, social surveys, and experiments to test communication theory driven hypotheses and research questions. Students will learn to critique existing research, perform literature reviews, create survey instruments, design and conduct experiments, perform content analysis, and present research findings. Course is ideal for students who are interested in a career in research and graduate study in communication.

COM 470 Special Topics in Communication Theory and Research
Credits: 3
Prerequisites: COM 101 or permission of instructor
Corequisites: None
Type: SEM
Content varies each semester. Topics include communication research and theory, communication technologies, intercultural communication, and organizational communication research.

COM 471 Special Topics in Communication Theory and Research
Credits: 3
Prerequisites: COM 101 or permission of instructor
Corequisites: None
Type: SEM
Content varies each semester. Topics include communication research and theory, communication technologies, intercultural communication, and organizational communication research.

COM 472 Special Topics in Communication Theory and Research
Credits: 3
Prerequisites: COM 101 or permission of instructor
Corequisites: None
Type: SEM
Content varies each semester. Topics include communication research and theory, communication technologies, intercultural communication, and organizational communication research.

COM 473 Special Topics in Communication Theory and Research
Credits: 3
Prerequisites: COM 101 or permission of instructor
Corequisites: None
Type: SEM
Content varies each semester. Topics include communication research and theory, communication technologies, intercultural communication, and organizational communication research.

COM 474 Special Topics in Communication Theory and Research
Credits: 3
Prerequisites: COM 101 or permission of instructor
Corequisites: None
Type: SEM
Content varies each semester. Topics include communication research and theory, communication technologies, intercultural communication, and organizational communication research.

COM 475 Special Topics in Communication Theory and Research
Credits: 3
Prerequisites: COM 101 or permission of instructor
Corequisites: None
Type: SEM
Content varies each semester. Topics include communication research and theory, communication technologies, intercultural communication, and organizational communication research.

COM 476 Special Topics in Communication Theory and Research
Credits: 3
Prerequisites: COM 101 or permission of instructor
Corequisites: None
Type: SEM
Content varies each semester. Topics include communication research and theory, communication technologies, intercultural communication, and organizational communication research.

COM 477 Special Topics in Communication Theory and Research
Credits: 3
Prerequisites: COM 101 or permission of instructor
Corequisites: None
Type: SEM
Content varies each semester. Topics include communication research and theory, communication technologies, intercultural communication, and organizational communication research.
COM 478 Special Topics in Communication Theory and Research  
Credits: 3  
Prerequisites: COM 101 or permission of instructor  
Corequisites: None  
Type: SEM  
This course is an application oriented course, designed to apply various techniques of scientific inquiry towards the testing of communication theories. In this course, students will apply research methodology ranging from content analysis, social surveys, and experiments to test communication theory driven hypotheses and research questions. Students will be taught to critique existing research, perform literature reviews about a topic, create surveys instruments, design and conduct experiments, perform content analysis, and write-up and present the findings of a research. This is an ideal course for students who are serious about a career in research and who plan to apply to the graduate program in communication.

COM 479 Special Topics in Communication Theory and Research: Advanced Research Methods in Communication  
Credits: 3  
Prerequisites: COM 101 or permission of instructor  
Corequisites: None  
Type: SEM  
Content varies each semester. Topics include communication research and theory, communication technologies, intercultural communication, and organizational communication research.

COM 480 Senior Colloquium in Communication  
Credits: 3  
Prerequisites: Senior standing in communication and permission of instructor, COM 101  
Corequisites: None  
Type: SEM  
A special seminar for seniors. Topics vary each semester.

COM 481 Special Topics in Interpersonal Communication  
Credits: 3  
Prerequisites: COM 101 or permission of instructor  
Corequisites: None  
Type: SEM  
Content varies each semester. Topics include analyzing face-to-face communication, nonverbal communication, and communication in health settings.

COM 482 Special Topics in Interpersonal Communication  
Credits: 3  
Prerequisites: COM 101 or permission of instructor  
Corequisites: None  
Type: SEM  
Content varies each semester. Topics include analyzing face-to-face communication, nonverbal communication, and communication in health settings.

COM 483 Special Topics in Interpersonal Communication  
Credits: 3  
Prerequisites: COM 101 or permission of instructor  
Corequisites: None  
Type: SEM  
Content varies each semester. Topics include analyzing face-to-face communication, nonverbal communication, and communication in health settings.

COM 484 Special Topics in Interpersonal Communication  
Credits: 3  
Prerequisites: COM 101 or permission of instructor  
Corequisites: None  
Type: SEM  
Content varies each semester. Topics include analyzing face-to-face communication, nonverbal communication, and communication in health settings.

COM 485 Special Topics in Interpersonal Communication  
Credits: 3  
Prerequisites: COM 101 or permission of instructor  
Corequisites: None  
Type: SEM  
Content varies each semester. Topics include analyzing face-to-face communication, nonverbal communication, and communication in health settings.

COM 486 Special Topics in Organizational Communication  
Credits: 3  
Prerequisites: COM 101 or permission of instructor  
Corequisites: None  
Type: SEM  
Content varies each semester. Topics include communication and decision making, conflict resolution, communication training and development, communication and the law, and communication on the worldwide web.

COM 487 Special Topics in Organizational Communication  
Credits: 3  
Prerequisites: COM 101 or permission of instructor  
Corequisites: None  
Type: SEM  
Content varies each semester. Topics include communication and decision making, conflict resolution, communication training and development, communication and the law, and communication on the worldwide web.

COM 488 Special Topics in Organizational Communication  
Credits: 3  
Prerequisites: COM 101 or permission of instructor  
Corequisites: None  
Type: SEM  
Content varies each semester. Topics include communication and decision making, conflict resolution, communication training and development, communication and the law, and communication on the worldwide web.

COM 489 Special Topics in Organizational Communication  
Credits: 3  
Prerequisites: COM 101 or permission of instructor  
Corequisites: None  
Type: SEM  
Content varies each semester. Topics include communication and decision making, conflict resolution, communication training and development, communication and the law, and communication on the worldwide web.

COM 490 Special Topics in Mass Communication  
Credits: 3  
Prerequisites: COM 101 or permission of instructor  
Corequisites: None  
Type: SEM  
Content varies each semester. Topics include television newscasting, mass communication and cultural studies, contemporary media issues, daytime TV/soaps, information systems, and communication technology.

COM 491 Special Topics in Mass Communication  
Credits: 3  
Prerequisites: COM 101 or permission of instructor  
Corequisites: None  
Type: SEM  
Content varies each semester. Topics include television newscasting, mass communication and cultural studies, contemporary media issues, daytime TV/soaps, information systems, and communication technology.

COM 492 Special Topics in Mass Communication  
Credits: 3  
Prerequisites: COM 101 or permission of instructor  
Corequisites: None  
Type: SEM  
Content varies each semester. Topics include television newscasting, mass communication and cultural studies, contemporary media issues, daytime TV/soaps, information systems, and communication technology.

COM 493 Special Topics in Mass Communication  
Credits: 3  
Prerequisites: COM 101 or permission of instructor  
Corequisites: None  
Type: SEM  
Content varies each semester. Topics include television newscasting, mass communication and cultural studies, contemporary media issues, daytime TV/soaps, information systems, and communication technology.

COM 494 Internship in Communication  
Credits: 1  
Prerequisites: Senior stand & Communication major; Permission of Instructor, COM 101  
Corequisites: None  
Type: TUT  
Involves internships generally conducted in Buffalo-area organizations, such as public relations firms, the local media, businesses and industries, and government agencies. Graded pass/fail.

COM 495 Honors in Communication  
Credits: 3  
Prerequisites: senior standing in communication, permission of instructor, COM 101  
Corequisites: None  
Type: SEM  
A special seminar for seniors. Topics vary each semester.

COM 496 Internship in Communication  
Credits: 3  
Prerequisites: senior standing in communication, permission of instructor, COM 101  
Corequisites: None  
Type: TUT  
Involves internships generally conducted in Buffalo-area organizations, such as public relations firms, the local media, businesses and industries, and government agencies. Graded pass/fail.

COM 497 Honors in Communication  
Credits: 3  
Prerequisites: Senior stand & Communication  major; Permission of Instructor, COM 101  
Corequisites: None  
Type: SEM  
A special seminar for seniors. Topics vary each semester.

COM 498 Independent Study  
Credits: 1  
Prerequisites: COM 101; permission of advisor and instructor  
Corequisites: None  
Type: TUT  
Involves development of an individual project of inquiry into an area of particular relevance to student interest within the field of communication. Graded pass/fail.
Comparative Literature

COL 130 Introduction to the Twentieth Century
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Offers the student who is beginning to read modernist texts an overview of the various movements that shaped and influenced the cultural scene in the early part of the century. Attempts to distinguish between modernism and the avant-garde with reference to such movements as futurism, dadaism, surrealism, expressionism, and socialist realism.

COL 150 World Literature: The Fantastic
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
An international survey of the literature of the fantastic. Pays particular attention to modernism's fascination with the eerie and the uncanny. Asks why the fantastic seems to serve as such a suitable emblem for our age through a reading of international texts in a comparative context. Also considers the way in which the fantastic serves as a social commentary on the society that produces it.

COL 226 Special Topics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Course content varies according to the interests of the instructor. Topics may explore a specific philosophical, literary, and/or cultural issue or problem.

COL 251 Masterpieces of World Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Invites students in all fields to explore the study of literature. Introduces a wide variety of texts, both in terms of historical breadth and genre. The courses are not a survey with a program of systematic, obligatory coverage. Rather, in readings that run from Homer to contemporary cinema and that investigate the epic, poetry, political documents, fiction, and film, we consider the ways in which such texts function and why the place of such texts is crucial to understanding ourselves.

COL 255 Crime and Punishment
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Considers a range of major literary and philosophical texts dealing with crime, guilt, retribution, and punishment. Students discuss these texts in their social and literary contexts.

COL 275 Special Topics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Course content varies according to the interests of the instructor. Topics may explore a specific philosophical, literary, and/or cultural issue or problem.

COL 280 City in Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
The city has undergone revolutionary changes in recent times, yet has itself always been a witness to progress and a site of history and storytelling. Studies the city in a modern or postmodern manner by examining the way in which it serves as a model for design, government, and policing. Examines the commonality and differences linking the modern city to its predecessors. While drawing mainly on literary works, we also work in the fields of history, sociology, anthropology, and philosophy.

COL 301 Literary Theory—Twentieth Century
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Examines the most recent, and often controversial, developments in literary theory. As well as covering theoretical strains, such as formalism, New Criticism, structuralism, poststructuralism, Marxism, and the Frankfurt School, the course interpolates literary texts as examples of interpretive possibilities. Part of a two course module with COL 302.

COL 302 Literary Theory—History
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Charts the development of the theories of culture and literature, which both reflect and, in turn, shape the great works of our literary tradition. Students read aesthetic theory from the ancient Greeks through to the nineteenth century, covering such diverse periods as the Middle Ages, the Enlightenment, and Romanticism. Also studies literary texts for the way in which they help elucidate some of the issues being covered in the theory. Students should expect to develop an awareness of the historical import of such notions as genre, the beautiful, and so forth. See COL 301.

COL 311 Special Topics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Course content varies according to the interests of the instructor. Topics may explore a specific philosophical, literary, and/or cultural issue or problem.

COL 315 Signs and Representation
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Introduces theories of the sign and representation, and the development of these accounts in the twentieth century. The course is divided into three parts. Part one introduces basic concepts and pioneering theories: the work of Saussure and Peirce, formalism and structuralism (Levi-Strauss, Piaget, Jacksonson, Benjamin), their similarities and differences, and the debates their works have engendered. Part two considers developments and refinements of their work, particularly in various analyses of social power; among the figures analyzed here are Roland Barthes and his examination of bourgeois cultural life, and Michel Foucault and his understanding of social power and its investment in the production and control of discourse. Part three discusses poststructuralist critiques of structuralism, concentrating particularly on the work of the Derrideans, including a session on Kristeva, Cixous, and the writing of othersness.

COL 320 Literature and Desire
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
The psychological thrust of many literary works is a long-established truism. This is a course situated on the interface between literary works, mostly fictive, and the intricate web of social and psychological factors involved in desire, whether for love, power, or wealth. Combines philosophical and psychological approaches to literature.

COL 328 Rethinking Bodies
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Involves a general introduction to twentieth-century culture and art. Focuses on three centers of modernism: Vienna, Paris, and Berlin, and reaches toward that moment when innovations in linguistics, psychoanalysis, logical analysis, and radical literary works were at the peak of ferment. Literary texts, clinical texts, and visual texts form the material for the course, which aims to develop a notion of modernity equally applicable to all.

COL 340 Berlin, Paris, and Vienna at the Turn of the Century
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Involves a general introduction to twentieth-century culture and art. Focuses on three centers of modernism: Vienna, Paris, and Berlin, and reaches toward that moment when innovations in linguistics, psychoanalysis, logical analysis, and radical literary works were at the peak of ferment. Literary texts, clinical texts, and visual texts form the material for the course, which aims to develop a notion of modernity equally applicable to all.

COL 345 Special Topics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Course content varies according to the interests of the instructor. Topics may explore a specific philosophical, literary, and/or cultural issue or problem.

COL 387 Freud and Feminism
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces some of the central concepts in the writings of Sigmund Freud, focusing mainly on his understanding of the development of the ego or sense of self, the operations of the unconscious, and the genesis of sexual drives in the constitution of male and female subjects. The course explains these basic Freudian concepts through the central feminist question of sexual difference.
COL 443 Literature and War
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Analyzes some of the most important war novels, both European and American, from the perspective of the major theories of war. Theoretical texts include Sun Tsu, Huisginga, Clausewitz, and Freud. Literary texts include Swift, Crane, Flaubert, Tolstoy, and Jung.

COL 451 Modernism
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Pursues the great experiments of modernism in Europe and the United States over the period 1890 - 1945. Emphasizes the culture of combination, expansion, and distortion that characterized not only literature, but art, music, drama, and architecture. Readings by Rilke, Kafka, Proust, Joyce, Freud, Stein, Woolf, Barnes, and Borges.

COL 452 Romanticism
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines studies in British and European Romanticism across genres (poetry and the novel) and disciplines (philosophy, historiography, literature, music, and art). Particularly concerned with Romantic conceptions of language and subjectivity.

COL 470 Special Topics
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Course content varies. Topics are generally related to the research interests of the specific instructor. Could be entirely devoted to particular literary, philosophical or theoretical problems that range across centuries, or could be devoted to the study of a single author, period, or genre of literature, philosophy, or theory.

Computer Science

CSE 101 Computers: A General Introduction
Credits: 4
Prerequisites: Basic knowledge of arithmetic. No experience with computers needed.
Corequisites: None
Type: LEC/LAB
Introduces computers and applications software. Areas of study include computers and their societal impact; history; hardware; problem solving; buying computers and software; and application packages, such as word processing, spreadsheets, and database systems. Admitted computer science and computer engineering majors should not enroll in this course.

CSE 111 Great Ideas in Computer Science
Credits: 4
Prerequisites: None
Corequisites: None
Type: LEC/LAB
Designed to satisfy the mathematics core requirements. Students study algorithmic problem-solving techniques and gain an appreciation for some of the most interesting and significant results of computer science, as well as its intellectual and social significance. The course has both a mathematical and a laboratory component. Topics may include algorithm design, introduction to programming, structured programming, software tools, software engineering, text manipulation, numerical computation, transistors, very large-scale integrated circuits, machine architecture, language translation, computability and computational complexity, parallel computation, and artificial intelligence. Admitted computer science and computer engineering majors should not enroll in this course sequence.

CSE 113 Introduction to Computer Programming I
Credits: 4
Prerequisites: None
Corequisites: None
Type: LEC/REC
Introduction to computers and computer programming intended for nonmajors. Currently required for some School of Management majors and appropriate for others seeking a practical introduction to computer programming. Topics include the use of data types and variables, programming control constructs supported by modern languages, input/output, basic concepts of object-oriented programming (such as classes, objects, encapsulation, information hiding, and code reuse), as well as graphical user interfaces. No previous computer experience assumed. Not suitable for intended computer science or computer engineering majors except those who have absolutely no experience using a computer. Admitted computer science and computer engineering students should not take this course.

CSE 114 Introduction to Computer Programming II
Credits: 4
Prerequisites: CSE 113
Corequisites: None
Type: LEC/REC
Continuation of CSE 113 for nonmajors. Currently required for some School of Management majors and appropriate for others seeking additional programming skills. Emphasizes the use of modern object-oriented programming methodologies, such as class inheritance, polymorphism, and exceptions. Neither CSE 113 nor CSE 114 can count towards a CSE degree. Admitted computer science and computer engineering majors should not take this course.

CSE 115 Introduction to Computer Science for Majors I
Credits: 4
Prerequisites: No previous programming experience required
Corequisites: MTH 141 or equivalent
Type: LEC/REC
Provides the fundamentals of the field to computer science and computer engineering majors, introducing students to algorithm design and implementation in a modern, high-level programming language. Emphasizes problem solving by abstraction. Topics include object-oriented design using a formal modeling language; fundamental object-oriented principles such as classes, objects, interfaces, inheritance and polymorphism; simple event-driven programming; data types; variables; expressions; basic imperative programming techniques, including assignment, input/output, subprograms, parameters, sequencing, selection and iteration; the use of aggregate data structures, such as arrays or more general collections; simple design patterns.

CSE 116 Introduction to Computer Science for Majors II
Credits: 4
Prerequisites: CSE 115 or permission of instructor
Corequisites: None
Type: LEC/REC
Continuation of CSE 115. Heavily emphasizes abstract data types (ADTs) and object-oriented methodology, and expects students not only to understand ADTs but also to design and implement robust ADTs using a modern object-oriented programming language. Further emphasizes object-oriented techniques, which support sound software engineering, such as encapsulation, polymorphism and inheritance as well as the use of more complex design patterns. Essential topics integrated in this framework include the use of recursion; linked data structures, including lists, stacks, queues, binary trees, and other advanced data structures; and algorithms for searching and sorting; exceptions and exception handling, event-driven programming. Introduces the analysis of algorithm complexity (O-notation).

CSE 191 Discrete Structures
Credits: 4
Prerequisites: CSE 113 or CSE 115 or knowledge of introductory computer science/computer programming
Corequisites: None
Type: LEC/REC
Foundation material for further studies in computer science. Topics include logic, proofs, sets, functions, relations, recursion, recurrence relations, mathematical induction, graphs, trees, and some basic counting theory. CSE 191 is required for computer science and computer engineering majors.

CSE 199 Honors Seminar
Credits: 3
Prerequisites: four years of high school mathematics, knowledge of some programming language
Corequisites: None
Type: SEM
Specifically for students enrolled in the UB Honors Program. Enrollment is limited. Topics reflect the interest and research of the faculty member teaching the course. Offered irregularly.

CSE 241 Digital Systems
Credits: 4
Prerequisites: CSE 116
Corequisites: None
Type: LEC/REC
A course in digital principles which includes an introduction to machine dependent programming. Topics covered include: fundamentals of digital logic, computer arithmetic & Boolean algebra, minimization techniques, basic components of digital circuits such as logic gates and flip-flops, information representation, design of combinational and sequential circuits, memory devices and programmable logic devices, CPU organization, arithmetic logic unit and control unit design, assembly language programming.
CSE 250 Data Structures
Credits: 4
Prerequisites: CSE 116, CSE 191
Corequisites: None
Type: LEC/REC
Provides a rigorous analysis of the design, implementation, and properties of advanced data structures. Topics include order notation and time-space analysis and tradeoffs in a list, tree and graph algorithms, and hashing. Surveys library implementations of basic data structures in a high-level language. Advanced data structure implementations are studied in detail. Illustrates the importance of choosing appropriate data structures when solving a problem by programming projects in a high-level language different from the language of CSE 115 and CSE 116, also covers instruction in this language.

CSE 305 Introduction to Programming Languages
Credits: 4
Prerequisites: CSE 250
Corequisites: None
Type: LEC/REC
Examines the various components of programming languages so students will understand the choices that have been made by programming language designers, and how those choices affect how procedures may be expressed and how data are conceptualized. Topics generally include the nature of variables, types, expressions, control structures, subprograms, concurrency, and exceptions; syntax and semantics. Discusses different programming paradigms, such as imperative, functional, logic, procedural and object-oriented.

CSE 321 Real-Time and Embedded Operating Systems
Credits: 4
Prerequisites: CSE 341 or permission of instructor
Corequisites: None
Type: LEC/REC
Addresses some of the fundamental challenges in the design, implementation, and validation of these real-time and embedded systems. Topics include resource management, concurrency, secure coding practices, memory management, timeline design and analysis using metrics and schedulability tests, hardware interfacing, device driver programming, memory management on computer organization. Topics include computer abstractions and technology, performance evaluation, instruction set architecture, arithmetic logic unit design, advanced computer arithmetic, datapath and control unit design, pipelining, memory hierarchy, input-output.

CSE 331 Introduction to Algorithm Analysis and Design
Credits: 4
Prerequisites: CSE 250, MTH 142 with a grade of C or higher
Corequisites: None
Type: LEC/LAB
Introduces methods for algorithm design, paradigms such as divide and conquer, greedy, and dynamic programming, and techniques for algorithm analysis, such as asymptotic notations and estimates, as well as time/space tradeoffs. Topics include sorting, searching, string matching, graph algorithms, computational geometry, and more.

CSE 337 Introduction to Scientific Computing
Credits: 4
Prerequisites: MTH 141 with a grade of C or higher required
Corequisites: None
Type: LEC/LAB
Experience with the power of computation in exploring and solving problems in science, applied mathematics, and abstract mathematics, including such topics as the spread of diseases and forest fires, the motion of planets, and the sequencing of genes. Introduces a number of the basic tools of scientific computing and computational mathematics; programming in a high-level language such as Matlab or Maple; and the formulation, exploration and evaluation of mathematical models using simulation and visualization. Students will pursue in-depth projects involving some work in teams. Foundation for more advanced courses in mathematical modeling, numerical analysis, and computational mathematics, and for the use of computer simulations in other courses and student research projects. Offered irregularly. Cross-listed with MTH 337.

CSE 341 Computer Organization
Credits: 4
Prerequisites: CSE 241 or EE 378
Corequisites: None
Type: LEC/REC
Basic hardware and software issues of computer organization. Topics include computer abstractions and technology, performance evaluation, instruction set architecture, arithmetic logic unit design, advanced computer arithmetic, datapath and control unit design, pipelining, memory hierarchy, input-output.

CSE 379 Introduction to Microprocessors and Microcomputers
Credits: 3
Prerequisites: CSE 241 or EE 378
Corequisites: None
Type: LEC
Microprocessor architecture, machine language programming, microprocessor assemblers, assembly language programming, software development, memory and I/O interface, interrupts, microprocessor system design and microprocessor applications.

CSE 380 Introduction to Microprocessors and Microcomputers Lab
Credits: 3
Prerequisites: CSE 241 or EE 378
Corequisites: None
Type: LEC/LAB/REC
A microprocessor system and its application in embedded devices. This course is the laboratory component to CSE 379. Topics include: microprocessor architecture; memory organization; assembly language programming; microprocessor assemblers; software development; use of microprocessor boards; memory and I/O interfaces; programming peripherals; interrupt system programming; microprocessor system design and applications.

CSE 396 Introduction to the Theory of Computation
Credits: 4
Prerequisites: CSE 250
Corequisites: None
Type: LEC/REC
Covers machine models and formal specifications of the classes of computational problems they can solve. The central concepts are the Turing machine and the classes of decidable and computably enumerable languages. The Halting Problem and other natural problems are shown to be undecidable by Turing machines, implying that they are undecidable by high-level programming languages or any other known computational model. Finite automata, which are Turing machines without external memory, are shown to correspond to the class of regular languages. The course also covers regular expressions, time and space complexity of Turing machines, reducibility between problems, and NP-completeness.

CSE 410 Special Topics
Credits: 4
Prerequisites: permission of instructor
Corequisites: None
Type: LEC/REC
Credits: 4
Prerequisites: CSE 331, MTH 142 with a grade of C or higher
Corequisites: None
Type: LEC/REC
Introduces basic elements of the design and analysis of algorithms. Topics include asymptotic notations and analysis, divide and conquer, greedy algorithms, dynamic programming, fundamental graph algorithms, NP-completeness, approximation algorithms, and network flows. For each topic, beside in-depth coverage, we discuss one or more representative problems and their algorithms. In addition to the design and analysis of algorithms, students are expected to gain substantial discrete mathematics problem solving skills essential for computer scientists and engineers.

CSE 421 Introduction to Operating Systems
Credits: 4
Prerequisites: CSE 241, CSE 305
Corequisites: None
Type: LEC/REC
Covers the principles and techniques in the design of operating systems. Describes concepts of operating systems in terms of functions, structure, and implementation, particularly emphasizing multiprogramming. Topics include process coordination, deadlocks, memory management, device management, file systems, scheduling policies for CPU, and network and distributed operating systems. Illustrates concepts with examples from existing operating systems.

CSE 422 Operating Systems Internals
Credits: 4
Prerequisites: CSE 421 or permission of instructor
Corequisites: None
Type: LEC/REC
Covers an operating system (such as UNIX) as an example to teach the internal workings of operating systems. The material presented is more practical than the other operating systems related classes. The laboratory component of this course provides programming projects involving modifications to an operating system kernel (such as UNIX) on computers dedicated to use for this course. Topics covered include building the operating system kernel, the system call interface, process management, kernel services provided for processes, the I/O system, the internal workings of the file system, device drivers, and the kernel support of Interprocess Communications.

CSE 431 Algorithms Analysis and Design
Credits: 4
Prerequisites: CSE 331, MTH 142 with a grade of C or higher
Corequisites: None
Type: LEC/REC
Introduces the nature of variables, types, expressions, control structures, subprograms, concurrency, and exceptions; syntax and semantics. Discusses different programming paradigms, such as imperative, functional, logic, procedural and object-oriented.
CSE 435 Information Retrieval

Credits: 4
Prerequisites: MTH 309, CSE 250
Corequisites: None
Type: LEC/REC
This course will focus on text-based information retrieval (IR) techniques, more popularly known as search engines. Various IR models such as the Boolean model, vector space model, probabilistic model will be studied. Efficient indexing techniques for large document collections as well as specialized collections will be examined. Various query expansion techniques such as local context analysis will be introduced. Finally, the course will also discuss search engines for the web, and the use of link analysis to determine document/page relevance. Students will work on written assignments, as well as hands-on programming projects to gain expertise in this area.

CSE 437 Introduction to Numerical Analysis I

Credits: 4
Prerequisites: CSE 113 or CSE 115; MTH 241, MTH 306, MTH 309 or permission of instructor
Corequisites: None
Type: LEC
First part of a 2-semester sequence, which explores the design and implementation of numerical methods to solve the most common types of problems arising in science and engineering. Most such problems cannot be solved in terms of a closed analytical formula, but many can be handled with numerical methods learned in this course. Topics for the two semesters include: how a computer does arithmetic, solving systems of simultaneous linear or nonlinear equations, finding eigenvalues and eigenvectors of (large) matrices, minimizing a function of many variables, fitting smooth functions to data points (interpolation and regression), computing integrals, solving ordinary differential equations (initial and boundary value problems), and solving partial differential equations of elliptic, parabolic, and hyperbolic types. We study how and why numerical methods work, and also their errors and limitations. Practical experience is gained through course projects that entail writing computer programs. Cross-listed with MTH 437.

CSE 438 Introduction to Numerical Analysis II

Credits: 4
Prerequisites: CSE 437 or MTH 437
Corequisites: None
Type: LEC/REC
Second part of the 2-semester sequence described under CSE 437. Cross-listed with MTH 438.

CSE 442 Software Engineering

Credits: 4
Prerequisites: CSE 305
Corequisites: None
Type: LEC/REC
Examines in detail the software development process. Topics include software life-cycle models; architectural and design approaches; various techniques for systematic software testing; coding and documentation strategies; project management; customer relations; the social, ethical, and legal aspects of computing; and the impact of economic, environmental, safety, manufacturability, and sustainability factors on design. Students in this course participate in a real-world project from conception to implementation.

CSE 443 Introduction to Language Processors

Credits: 4
Prerequisites: CSE 305, CSE 396
Corequisites: None
Type: LEC/REC
Considers problems encountered in the design and implementation of a translator for high-level programming languages: lexical analysis, context-free grammars, parsing, storage allocation, code generation and optimization, and error recovery. Uses compiler constructor tools for the programming projects. Offered occasionally.

CSE 451 Program Development

Credits: 4
Prerequisites: CSE 305
Corequisites: None
Type: LEC/REC
A course in theoretical software engineering, covering the practical development of correct programs based on a mathematical notion of program correctness. Topics include: propositional and first-order logic; the specification of programs using Horn clause and Dijkstra's weakest preconditions; the definition of a small imperative language; assignment, sequencing, a conditional statement, and a loop; and programming as a goal-oriented developmental activity, based on the formal definition of a small language. Offered irregularly.

CSE 452 VLSI Testing

Credits: 4
Prerequisites: CSE 497 or permission of instructor
Corequisites: None
Type: LEC
Includes topics: VLSI design fundamentals; various aspects of testing; fault model; design for testability; built-in self-test; simulation at various levels; software tools and equipment, built-in self-testing PLAs; built-in self-testing RAMs. The major design project is on testable design of VLSI. Expects students to use the testable design concepts learned in the class and incorporate them into the circuits during the chip design. The project is an open-ended problem, and students are free to exercise a combination of ideas.

CSE 453 Hardware/Software Integrated Systems Design

Credits: 4
Prerequisites: CSE 380 and CSE 442, or permission of instructor
Corequisites: None
Type: LEC/REC
Software designs produced in the prerequisite CSE 442 Software Engineering course are carried here to a complete hardware realization. Bringing skills learned from previous hardware and software-oriented courses, students form multidisciplinary workgroups and are given tools, parts, goals, and constraints, all of which define the integrated design setting. These workgroups identify, formulate, and solve the hardware and software problems posed by their project, and defend their realization concepts at key intervals during the project build-out. Projects are tested, and a report analyzing the level of satisfaction of design and performance specifications submitted. Each group prepares a 'rollout' presentation, which includes a demonstration of their project in operation. This is a required course for CEN majors.

CSE 462 Database Concepts

Credits: 4
Prerequisites: CSE 305 or permission of instructor
Corequisites: None
Type: LEC/REC
Discusses basic concepts of modern database management systems. Topics include: data models, query languages, integrity constraints, indexing, query optimization, and transaction management. Students implement an example database application. Offered irregularly.

CSE 463 Knowledge Representation

Credits: 4
Prerequisites: CSE 305 or permission of instructor
Corequisites: None
Type: LEC/REC
Introduces the field of knowledge representation and reasoning, the branch of artificial intelligence concerned with the techniques for representing and reasoning about the information to be used by an AI program. Topics typically include: the knowledge-representation hypothesis; propositional and first-order logic; model finding; resolution; syntactic proof theory; direct and refutation methods; relevance logic; truth maintenance and belief revision; commonsense reasoning; ontologies. Other topics that may be included as time permits are: modal logics; non-monotonic, defeasible, and default logics; logics of knowledge and belief; frames; description logics; vague and uncertain beliefs; logics of actions and time.

CSE 467 Computational Linguistics

Credits: 4
Prerequisites: CSE 305 or permission of instructor
Corequisites: None
Type: LEC/REC
Introduces computational models for understanding natural languages. Covers syntactic and semantic parsing, generation, and knowledge representation techniques. Cross-listed with LIN 467.

CSE 473 Introduction to Computer Vision and Image Processing

Credits: 4
Prerequisites: CSE 305 or permission of instructor
Corequisites: None
Type: LEC/REC
Introduces those areas of artificial intelligence that relate to fundamental issues and techniques of computer vision and image processing. Emphasizes physical, mathematical, and image-processing aspects of vision. Topics include image formation, edge detection, segmentation, convolution, image-enhancement techniques, extraction of features (such as color, texture, and shape), object detection, 3-D vision, and computer system architectures and applications.

CSE 474 Introduction to Machine Learning

Credits: 4
Prerequisites: EAS 305 or MTH 309 or permission of instructor
Corequisites: None
Type: LEC/REC
Involves teaching computer programs to improve their performance through guided training and unguided experience. Takes both symbolic and numerical approaches. Topics include concept learning, decision trees, neural nets, latent variable models, probabilistic inference, time series models, Bayesian learning, sampling methods, computational learning theory, support vector machines, and reinforcement learning.

CSE 484 Philosophy of Computer Science

Credits: 4
Prerequisites: Junior or senior standing, or permission of instructor
Corequisites: None
Type: LEC/REC
Introduces philosophical issues in computer science. Examines the nature of computer science (e.g., whether it is a science or a branch of engineering, whether it is the study of physical computers or abstract computing); the nature of computation, algorithms, and software, and their implementation in computer programs; the nature of computer programs (e.g., whether they are theories, models, or simulations; whether they can or should be patented or copyrighted; whether they can be verified). Also briefly explores the philosophy of artificial intelligence and issues in computer ethics. Offered irregularly. Cross listed with PHI 484.
CSE 486 Distributed Systems
Credits: 4
Prerequisites: CSE 305
Corequisites: None
Type: LEC/REC
Addresses some of the fundamental challenges in the design, implementation and deployment of large-scale distributed systems. Concepts covered include concurrency, synchronization, connection establishment, event handling, inter process communication, storage management, and service registration, discovery, and lookup. Also covers issues related to distributed objects such as life cycle management, mobility, security, naming, location, evolution, and autonomy. Analyses and implements possible solutions using objects, processes, services, components and frameworks. Offered irregularly.

CSE 487 Information Structures
Credits: 4
Prerequisites: CSE 305 programming languages or equivalent, object-oriented design and programming in Java
Corequisites: None
Type: LEC
Overview of information technology in large-scale commercial and scientific systems, emphasizing state of the art computing in realizing various services and the frameworks supporting these services. Concepts covered include: enterprise modeling, process modeling, process automation and streamlining, workflow management, messaging, persistent message queues, transaction monitoring, document exchange, application servers, service definition (web services, web services definition language: WSDL), connection and resource reservation protocols (TCP, grid computing), integration technologies and architectures (Java 2 Enterprise Edition: J2EE, extensible Markup Language: XML, and Globus toolkit).

CSE 488 Modern Networking Concepts
Credits: 4
Prerequisites: C and C++ language programming experience, and either EAS 305 or MTH 411
Corequisites: None
Type: LEC/REC
Introduces basic elements of modern computer and telecommunications networks. Discusses a hybrid five-layer reference model resembling the popular TCP/IP model. In each layer, the course introduces the state-of-the-art hardware and software technologies. These include, for example, fiber-optic and wireless/mobile/cellular communications at the physical layer, to network security in the application layer. Offered once a year.

CSE 489 Computer Architecture
Credits: 4
Prerequisites: CSE 379 or CSE 341
Corequisites: None
Type: LEC/REC
Examines system architecture with 32- and 64-bit microprocessors. Topics include the design of high-performance computer systems, such as workstations and multiprocessor systems using recent advanced microprocessors. Considers the internal architecture of recent microprocessors, followed by vector processing, memory hierarchy design, and communication subsystems for I/O and interprocessor communication.

CSE 490 Undergraduate Peer Mentoring
Credits: 1-3
Prerequisites: None
Corequisites: None
Type: TUT
This course provides the opportunity for undergraduate students to serve as undergraduate mentors for students entering the Computer Science & Engineering department. Students that are interested in becoming mentors are asked to contact the mentor program coordinators. Registration in the course is by permission of the coordinators only.

CSE 491 Introduction to VLSI Electronics
Credits: 4
Prerequisites: Senior standing
Corequisites: None
Type: LEC/LAB
Introduces VLSI electronics. VLSI is the integration of a large number of logic gates on a single semiconductor chip. Applications of VLSI include memory, microprocessors, and signal processing. Topics include digital system design; VLSI systems; CMOS circuits; use of CAD tools in the layout of full-custom and semi-custom integrated circuits. Project required. Emphasizes designing a working chip and understanding various steps in design. Typical projects: ALU, games, controllers.

CSE 492 Senior Capstone/Seminar
Credits: 3
Prerequisites: Completion of year 1-3 major requirements
Corequisites: None
Type: SEM
Course for senior-level majors intended to provide a learning experience that integrates knowledge from lower-level courses. Topics may vary.

CSE 493 Supervised Teaching
Credits: 1
Prerequisites: Junior status, 3.0 GPA, A- or better in course teaching, permission of instructor
Corequisites: None
Type: TUT
Students participating in this course serve as undergraduate teaching assistants. Responsibilities include leading lab and recitation sections, and holding study sessions.

CSE 494 Internship
Credits: 1
Prerequisites: Accepted CSE major and personal interview with an advisor in computer science and engineering
Corequisites: None
Type: TUT
Field experience working on a computer science project in a real-world setting under the joint direction of a supervisor from industry and a faculty advisor from the Department of Computer Science and Engineering. Projects selected should integrate the material learned in academic courses. Upon completing the internship the student is expected to have fulfilled an internship contract. Only S/U grades are given (therefore, internships may not be used to satisfy requirements for the BA or BS). No more than 5 credit hours of CSE 494 may be taken. Offered every semester.

CSE 495 Departmental Honors Thesis or Project
Credits: 3
Prerequisites: Acceptance into departmental honors program and permission of instructor
Corequisites: None
Type: TUT
Accepted seniors pursue a specialized independent study leading to an honors thesis or project.

CSE 496 Undergraduate Research and Creative Activity
Credits: 1
Prerequisites: Permission of instructor
Corequisites: None
Type: TUT
Students collaborate with faculty research mentors on an ongoing project in a faculty member's laboratory or conduct independent research under the guidance of a faculty member. This experience provides students with an inquiry based learning opportunity and engages them as active learners in a research setting.

CSE 497 Independent Study
Credits: 1
Prerequisites: permission of instructor, preferably during the previous semester
Corequisites: None
Type: TUT
Independent study in an area of computer science in which the student is particularly interested. (May not be used to satisfy the requirements for the BA or BS.)

Cora Maloney College

CPM 101 Freshman Experience Seminar
Credits: 2
Prerequisites: First semester freshmen only
Corequisites: None
Type: SEM
Assists first year students with adjustment to the university and helps them develop a better understanding of themselves, UB, and each other. By the end of the course, students should come to appreciate the goals, methods and values of higher education; strive to become independent, motivated learners; establish a mentor relationship with a faculty or staff member on campus; endeavor to become part of a community of fellow learners; become familiar with campus resources and the services available; enhance their reading, writing, speaking, critical thinking, library, and study skills; evaluate their talents and interests in relation to career planning; examine and clarify their values; and recognize and appreciate the rich cultural diversity of the university.

CPM 125 Social Photography I
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM/LAB
Introductory photography course, explores the use of photography for creative social commentary. Students survey the past work of this genre, and produce a series of photo projects. Photographs will be digitally produced.

CPM 205 Social and Political Organizing
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Introduces students to the many concepts of community organizations and how they are formed, structured, and managed. The course is conducted through lectures, readings, and writing assignments; community visits; and guest lectures. Analyzes community organizing as a profession practiced by various individuals and groups.

CPM 214 Social Photography II
Credits: 3
Prerequisites: CPM 125 or permission of instructor
Corequisites: None
Type: SEM
Intermediate/advanced photography course, increases experience with and understanding of social documentary photography. Students will produce a semester long documentary series of their own choosing. Photographs will be digitally produced.
**CPM 250 USA & the Muslim World**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Analyzes media content and the constructors of images and perceptions with a sample inventory from news and film media. Expects students to investigate the role of the United States in world politics. Treats students as policy experts who form their own policies, and encourages open discussions. Students who are interested in current affairs and U.S. media, social and political conflicts of the world, international relations, and media study will find this course engaging and informative.

**CPM 264 The Black Child in America**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Overview of important topics in understanding the development of African-American children in America. Examines current issues in child development regarding educational and psychological issues in Black child development, the social and economic status of African-American youth in America, and the strengths of Black families. Students also become familiar with cultural variations, and relate such variations within the Black community.

**CPM 288 Selected Topics**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Course topics vary by semester.

**CPM 292 Work/Employment**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Assists students in developing and implementing job-hunting strategies. Emphasizes resume writing, interviewing, researching employment opportunities in various industries and finding the right job in today's competitive market. Supplements classroom lectures with guest speakers.

**CPM 295 Special Topics**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Course topics vary by semester.

**CPM 296 Welfare Impact on Inner-City Residents**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Addresses two main issues: the way in which the normal functioning of the American economic system and its value structure generate an impoverished class, and how governmental response to this class often serves as an instrument of social control.

**CPM 298 Religion in the Inner City**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Examines religion in the inner city from a historical, spiritual and in some cases political perspective. Focuses attention on the black church. Explores the differences, if any, between black church and other church theologies.

**CPM 305 Critical Readings**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Course topics vary by semester.

**CPM 310 Black Writers**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Examines past and present Black Americans who have made significant contributions to the welfare of this country in politics, economics, religion, education, and the arts. Also discusses where they came from, where they are now, and what their contributions were to American society.

**CPM 367 Communications and the Law**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Introduces and examines various types of communication within the scope of the U.S. Constitution, the extent and manner of their protection, and governmental regulation of their form and content.

**CPM 382 Law and Urban Problems**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Examines the American legal system and the ways in which it attempts to resolve a variety of urban problems. Among the issues considered are housing, race, sex, employment discrimination, welfare rights, and restrictions affecting the handicapped. Readings and discussions focus primarily on case and statutory law.

**CPM 387 Black Females in Literature**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Focuses on literature from African American women writers that explores their themes, images, and roles present in narratives, fiction, poetry, and plays.

**CPM 484 Special Topics**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Course topics vary by semester.

**CPM 493 Research Methods**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Designed for upper-level undergraduate students. Covers the essential skills required for conducting research and developing proposal-writing skills. Gives weekly assignments to help familiarize students with research techniques and use of library facilities to conduct literature reviews and collection of relevant documentation/statistics/Introduces students to the use of computers, both personal and mainframe, with hands-on experience in using the mainframe editor, electronic mail, and accessing news groups. Designed for majors who require statistical knowledge. The course focuses on statistical analysis by discussing theoretical concepts, and by using popular statistical packages such as SPSS.

**CPM 496 Community Service Internship**

Credits: 1  
Prerequisites: Juniors & Seniors Only  
Corequisites: None  
Type: TUT  
The Public Service Internship encourages active citizenship by allowing students to gain direct exposure to and practical work experience from, a wide range of diverse public and private agency assignments. Students develop valuable leadership skills while learning about the workings of, and making meaningful contributions to, the work of the organization.

**CPM 499 Independent Study**

Credits: 1  
Prerequisites: permission of instructor  
Corequisites: None  
Type: TUT  
Allows students to initiate, develop, complete, or participate in a supervised project under the guidance of an instructor.

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**Counseling, School, and Education Policy**

**CEP 207 Introduction to Statistics and Computing**

Credits: 4  
Prerequisites: None  
Corequisites: None  
Type: LEC/REC  
Introduces the theoretical bases of descriptive and inferential statistics. Includes measures of central tendency, dispersion, and association; the normal t, chi-square and F-distributions; point and interval estimation; and hypothesis testing.

**CEP 400 Educational Psychology**

Credits: 3  
Prerequisites: LAI 350 (if using for education minor)  
Corequisites: None  
Type: LEC/REC  
Covers psychological principles and research relevant to educational practice, human growth and development, the learning process, educational measurement, individual differences, and mental health in the schools.

**CEP 401 Introduction to Counseling**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Provides an overview of the counseling professions. Covers history and origins, theoretical approaches to counseling and psychotherapy, techniques, group counseling, marriage and family counseling, grief counseling, and vocational counseling.

**CEP 404 Introduction to the Rehabilitation of Substance Abuse and Addiction**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Introduces the field of rehabilitation counseling and its application to substance abuse and addiction. Examines the social, psychological, and biological bases of addiction; assessment, diagnosis, and treatment issues; and understanding of the functional limitations of substance addiction, especially as they relate to work and independent living.
CEP 410 Introduction to Grief and Loss

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC

Examines the physical, emotional, social, and spiritual dynamics which surround the concept(s) of grief and loss, a universal experience. Loss is defined as any experience which restricts a person; from the concrete loss such as the death of a loved one to the intangible - such as the shattered dream or expectation. Grief is defined as the holistic reactions and responses to loss. Students will develop an understanding of grieving styles and how grief is impacted by gender, age, family dynamics, culture, disabilities, religion and spirituality, as well as self-care strategies and the skills to respond in an effective manner to grieving adults and children.

CEP 411 Special Topics in Counseling and Psychology

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC

Varies depending upon course topic. Specific course descriptions are available prior to the semester the course is offered.

CEP 453 Introduction to Rehabilitation

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC

Examines basic history, concepts, and practices in the rehabilitation of persons with physical, mental, or emotional disabilities. Emphasizes modern vocational rehabilitation, and considers rehabilitation careers.

Dance

THD 103 Performance Appreciation

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC

Studies theatre and dance performances and performers. Requires students to respond to both videotaped and live performances.

THD 111 Introduction to Body Movement 1

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM

Develops movement awareness through body-mind exercises and basic technique. Emphasizes space, energy, and time in movement.

THD 122 Introduction to Body Movement 2

Credits: 3  
Prerequisites: THD 111 or permission of instructor  
Corequisites: None  
Type: SEM

Continuation of THD 111 with further development of basic techniques within the various disciplines.

THD 201 Modern Dance 1

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC

Foundations course in basic movement concepts of time, space, and energy, emphasizing technical development and creative exploration.

THD 202 Modern Dance 2

Credits: 3  
Prerequisites: THD 201  
Corequisites: None  
Type: LEC

Foundations course in basic movement concepts of time, space, and energy, emphasizing technical development and creative exploration.

THD 210 Tap Dance 1

Credits: 2  
Prerequisites: None  
Corequisites: None  
Type: LEC

Teaches the fundamentals of tap dance, including basic rhythmic structure and incorporation of dance fundamentals, such as alignment and style, in conjunction with tap technique.

THD 211 Tap Dance 2

Credits: 2  
Prerequisites: THD 210  
Corequisites: None  
Type: LEC

Teaches the fundamentals of tap dance, including basic rhythmic structure and incorporation of dance fundamentals, such as alignment and style, in conjunction with tap technique.

THD 213 Ballet 1

Credits: 2  
Prerequisites: None  
Corequisites: None  
Type: LEC

Teaches the fundamentals of ballet technique, including correct body alignment, basic barre and center work, and combinations at the elementary level.

THD 214 Ballet 2

Credits: 2  
Prerequisites: THD 213  
Corequisites: None  
Type: LEC

Teaches the fundamentals of ballet technique, including correct body alignment, basic barre and center work, and combinations at the elementary level.

THD 229 Tutorials in Dance

Credits: 1  
Prerequisites: None  
Corequisites: None  
Type: SEM

For students who require additional study in a particular area.

THD 263 Jazz Dance 1

Credits: 2  
Prerequisites: None  
Corequisites: None  
Type: LEC

Presents jazz forms, including barre and center work emphasizing these forms’ relationships to lineage-based societies, as well as to classical, contemporary, rock, and popular dance.

THD 264 Jazz Dance 2

Credits: 2  
Prerequisites: THD 263 and permission of instructor  
Corequisites: None  
Type: LEC

Presents jazz forms, including barre and center work emphasizing these forms’ relationships to lineage-based societies, as well as to classical, contemporary, rock, and popular dance.

THD 279 Tutorials in Dance

Credits: 1  
Prerequisites: permission of instructor  
Corequisites: None  
Type: SEM

For students who require additional study in a particular area.

THD 300 Beginning Pointe

Credits: 1  
Prerequisites: permission of instructor  
Corequisites: None  
Type: SEM

An extension of ballet study using a blocked shoe. Introduces correct placement and use of the foot on pointe.

THD 301 Beginning Pointe

Credits: 1  
Prerequisites: permission of instructor  
Corequisites: None  
Type: SEM

An extension of ballet study using a blocked shoe. Introduces correct placement and use of the foot on pointe.

THD 302 Beginning Pointe

Credits: 1  
Prerequisites: permission of instructor  
Corequisites: None  
Type: SEM

An extension of ballet study using a blocked shoe. Introduces correct placement and use of the foot on pointe.

THD 310 Tap 3

Credits: 3  
Prerequisites: THD 211 or permission of instructor  
Corequisites: None  
Type: SEM

Expands the tap dancer’s movement, vocabulary, and historical understanding of this dance form. Emphasizes in particular the aural, visual, and expressive elements of tap dance.

THD 311 Tap 4

Credits: 3  
Prerequisites: THD 310 or permission of instructor  
Corequisites: None  
Type: SEM

Expands the tap dancer’s movement, vocabulary, and historical understanding of this dance form. Emphasizes in particular the aural, visual, and expressive elements of tap dance.

THD 337 Dance Studio—Zodiaque

Credits: 4  
Prerequisites: audition only  
Corequisites: None  
Type: SEM

Provides performance experience in Zodiaque, the university’s resident dance company.
THD 338 Dance Studio—Zodiaque
Credits: 4
Prerequisites: audition only
Corequisites: None
Type: SEM
Performing experience in Zodiaque, the university's resident dance company.

THD 340 Dance Studio
Credits: 2
Prerequisites: audition only
Corequisites: None
Type: LEC
A continuation of THD 01-THD 0.

THD 341 Ballet 3
Credits: 3
Prerequisites: THD 214 or permission of instructor
Corequisites: None
Type: SEM
A continuation of THD 213-THD 214.

THD 342 Ballet 4
Credits: 3
Prerequisites: THD 341
Corequisites: None
Type: SEM
A continuation of THD 213-THD 214.

THD 345 Modern Dance 3
Credits: 2
Prerequisites: THD 202 or permission of instructor
Corequisites: None
Type: SEM
A continuation of THD 201-THD 202.

THD 346 Modern Dance 4
Credits: 3
Prerequisites: THD 345
Corequisites: None
Type: SEM
A continuation of THD 201-THD 202.

THD 367 Tutorials in Dance
Credits: 1
Prerequisites: permission of instructor
Corequisites: None
Type: LAB
For students who require additional study in a particular area.

THD 371 Jazz Dance 3
Credits: 3
Prerequisites: THD 264 or permission of instructor
Corequisites: None
Type: LEC
A continuation of THD 263-THD 264.

THD 372 Jazz Dance 4
Credits: 3
Prerequisites: THD 371
Corequisites: None
Type: LEC
A continuation of THD 263 - THD 264.

THD 378 Pas de Deux 1
Credits: 1
Prerequisites: THD 341; permission of instructor
Corequisites: None
Type: SEM
Studies partnering through classical and contemporary pas de deux. Emphasizes technical and dramatic aspects of partnering, rhythm, timing, projection, counter-balancing the movements of a partner, and developing dramatic content through movement using gesturing and line.

THD 379 Pas de Deux 2
Credits: 1
Prerequisites: THD 378 or permission of instructor
Corequisites: None
Type: SEM
Studies partnering through classical and contemporary pas de deux. Emphasizes technical and dramatic aspects of partnering, rhythm, timing, correct placement, timing, projection, counter-balancing the movements of a partner, and developing dramatic content through movement using gesturing and line.

THD 381 Social Dance Forms 1
Credits: 3
Prerequisites: THD 201; THD 213 or THD 263; MTR 220 or permission of instructor
Corequisites: None
Type: SEM
Covers the history and performance of approximately fourteen early and contemporary social dances, including the pavane, galliard, minuet, waltz, fox-trot, swing, tango, and Latin Caribbean dances.

THD 382 Social Dance Forms 2
Credits: 3
Prerequisites: THD 381 or permission of instructor
Corequisites: None
Type: SEM
Covers the history and performance of approximately fourteen early and contemporary social dances, including the pavane, galliard, minuet, waltz, fox-trot, swing, tango, and Latin Caribbean dances.

THD 385 The Male Dancer
Credits: 1
Prerequisites: THD 214, dance majors, permission of instructor
Corequisites: None
Type: SEM
Studies the role of the male in dance. Includes character interpretation, upper body strength, elevation, pirouettes, and variations from the male dance repertory.

THD 400 Creative Movement
Credits: 3
Prerequisites: THD 341, THD 345, THD 371 or permission of instructor
Corequisites: None
Type: SEM
Explores creative problem solving, mind-body integration, and the creative process in movement using simple through increasingly complex individual and group exercises. Prerequisite for THD 441.

THD 407 Tap 5
Credits: 3
Prerequisites: THD 371 or permission of instructor
Corequisites: None
Type: SEM
Studies the role of the male in dance. Includes character interpretation, upper body strength, elevation, pirouettes, and variations from the male dance repertory.

THD 410 Modern Dance 5
Credits: 3
Prerequisites: THD 346 or permission of instructor
Corequisites: None
Type: SEM
A continuation of THD 345-THD 346.

THD 411 Modern Dance 6
Credits: 3
Prerequisites: THD 410, permission of instructor
Corequisites: None
Type: SEM
A continuation of THD 345-THD 346.

THD 417 Jazz Dance 5
Credits: 3
Prerequisites: THD 372 or permission of instructor
Corequisites: None
Type: SEM
Surveys systems of alignment, placement, movement efficiency, and tension reduction. Gives developing artists a strong movement foundation from which to build in their particular disciplines. Gives preference to theatre, dance, and music majors. Welcomes nonmajors on a space-available basis.

THD 418 Jazz Dance 6
Credits: 3
Prerequisites: THD 417 or permission of instructor
Corequisites: None
Type: SEM
A continuation of THD 371-THD 372.

THD 421 Ballet 5
Credits: 3
Prerequisites: THD 342 or permission of instructor
Corequisites: None
Type: SEM
A continuation of THD 342.

THD 425 Contemporary Dance
Credits: 3
Prerequisites: THD 342 or permission of instructor
Corequisites: None
Type: SEM
A continuation of THD 342.
THD 422 Ballet 6
Credits: 3
Prerequisites: THD 421, permission of instructor
Corequisites: None
Type: SEM
A continuation of THD 342. Studies technique of increased difficulty, variety, and complexity, and pays attention to precision of execution, performance, and style.

THD 430 Dance History
Credits: 3
Prerequisites: THD 342 or THD 346 or THD 372 or permission of instructor
Corequisites: None
Type: LEC
Studies the creative process in dance from early history to the present. Includes videos and discussions on dance and related fields. Knowledge of dance is essential. Gives preference to theatre, dance, and music majors.

THD 432 Applied Kinesiology and Anatomy for Dancers
Credits: 3
Prerequisites: THD 341, THD 345, THD 371, theatre and dance major or permission of instructor
Corequisites: None
Type: LEC
Examines the science of motion applied to dance and movement. Studies, in depth, the structure and function of the skeletal and muscular systems.

THD 441 Choreography 1
Credits: 4
Prerequisites: TH 203, THD 400
Corequisites: None
Type: SEM
Explores the art and craft of making dances. Studies the elements of dance composition, including the development of solo and group studies for class presentation.

THD 442 Choreography 2
Credits: 1
Prerequisites: THD 441, permission of instructor
Corequisites: None
Type: SEM
Explores the art and craft of making dances. Studies the elements of dance composition, including the development of solo and group studies for class presentation.

THD 454 Teaching Methods in Dance
Credits: 3
Prerequisites: one of the following pairs of courses: THD 341-THD 342, THD 345-THD 346, THD 371-THD 372, or permission of instructor
Corequisites: None
Type: SEM
For upper-level dance students interested in expanding their knowledge and practical experience in preparation for a career in the field of dance education. Includes lesson plan development, injury prevention, and experience in practical teaching situations.

THD 455 Special Topics in Dance
Credits: 1
Prerequisites: Variable (set by instructor)
Corequisites: None
Type: SEM
Topics vary by semester.

THD 479 Tutorials in Dance
Credits: 1
Prerequisites: permission of instructor
Corequisites: None
Type: TUT
Gives qualified students experience as teaching assistants or teaching interns.

THD 492 Variations
Credits: 1
Prerequisites: THD 491
Corequisites: None
Type: SEM
Studies and analyzes classical and contemporary solo dance variations from the works of major choreographers.

THD 496 Internship—Dance Teaching
Credits: 1
Prerequisites: None
Corequisites: None
Type: TUT
Gives qualified students experience as teaching assistants or teaching interns.

THD 499 Independent Study
Credits: 1
Prerequisites: permission of instructor by prior arrangement
Corequisites: None
Type: LAB
Involves independent study at the undergraduate level.

Economics

ECO 181 Introduction to Macroeconomics
Credits: 4
Prerequisites: None
Corequisites: None
Type: LEC/DIS
Covers principles of employment, inflation, business cycles, and growth; also considers policies for economic stabilization and full employment. May be taken independently of ECO 182.

ECO 182 Introduction to Microeconomics
Credits: 4
Prerequisites: None
Corequisites: None
Type: LEC/DIS
Covers principles of price determination, creation of value, distribution of income, competition, and principles of international trade. May be taken independently of ECO 181.

ECO 205 Money and Banking
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines the U.S. monetary system; including roles of financial institutions; commercial banking; creation of money; the Federal Reserve and monetary policy; and the macroeconomic relationships among money, interest rates, inflation, and gross domestic product.

ECO 206 History of the American Labor Movement
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines the American labor movement from its beginnings in the early nineteenth century through the present day, and studies economic and social determinants of its development.

ECO 207 Economic Classics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces the history of economic thought. Uses the original writings of prominent historical figures, such as Aristotle, Adam Smith, Karl Marx, Thorstein Veblen, and John M. Keynes.
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ECO 208 Introduction to Environmental Economics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Involves economic analysis of environmental problems. The course is issue-oriented; and considers such problems as air, water, and noise pollution; population growth; and environmental capacities.

ECO 209 Introduction to Urban Economics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Explores how cities and a system of cities contribute to economic growth; the role of cities in developed and developing countries; how economic activity is allocated within cities; the economics of housing, transportation, pollution, property taxes, and zoning; racial and income segregation and discrimination in cities; and urban poverty. ECO 209 and ECO 421 cannot both be taken for credit.

ECO 210 Comparative Economic Systems
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Comparative analysis of economic and political systems of capitalism, socialism, and mixed economies. Topics covered include market efficiency, rent-seeking, and regulation, and discussion of economic consequences of anarchy, democracy, and dictatorship.

ECO 211 Introduction to Health Economics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Conducts an economic analysis of the U.S. health-care delivery system; also considers the question of shortages or misdistribution of medical services, efficient production, medical care cost inflation, and alternative financing methods.

ECO 212 Current Economic Problems
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Uses elementary techniques of economic analysis to examine significant economic issues in order to provide insight into the issues and the consequences of policies advocated to address them. The issues examined are some of those current at the time the course is offered.

ECO 251 Government in the U.S. Economy
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Involves an empirical assessment of the size and scope of government activity in the United States; attempts a comprehensive and empirical understanding of the economic activities and influence of government in the United States.

ECO 263 Elements of Benefit-Cost Analysis
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Incorporates a benefit-cost criterion for comparing the relative economic merits of alternative public expenditure choices; also explores net present value, and the internal rate of return.

ECO 270 Regulation in the U.S. Economy
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines regulatory controls in the U.S. economy and their effects on entry by firms into an industry. Considers prices, profits, and quantity produced; product quality; and competitive structure of an industry.

ECO 276 Law and Economics: Equity and Efficiency
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines regulatory controls in the U.S. economy and their effects on entry by firms into an industry. Considers prices, profits, and quantity produced; product quality; and competitive structure of an industry.

ECO 303 The Economics of Poverty
Credits: 3
Prerequisites: ECO 181, ECO 182 and MTH 121-MTH 122 or MTH 141-MTH 142
Corequisites: None
Type: LEC
Studies classes and groups that, in the economy, are characterized as ‘impoverished’. Also studies causes of poverty and discrimination, and antipoverty and antidiscrimination socioeconomic policies.

ECO 304 Socialist Economies
Credits: 3
Prerequisites: ECO 181 and MTH 121-MTH 122 or MTH 141-MTH 142
Corequisites: None
Type: LEC
Examines the theory of socialism, and history and economic structures of socialist economies within the context of social relations, including social conflict, state planning, workers’ control, and economic development.

ECO 405 Microeconomic Theory
Credits: 3
Prerequisites: MTH 121-MTH 122 or MTH 141-MTH 142
Corequisites: None
Type: LEC
Intermediate level. Examines economic theory dealing with the economics of price determination, value, distribution, and competition.

ECO 406 Topics in Microeconomics
Credits: 3
Prerequisites: ECO 405
Corequisites: None
Type: LEC
Introduces new theories and applied topics in microeconomics beyond the basic subjects studied in ECO 405. Covers a broad range of imperfect markets, including monopoly, oligopoly, and monopolistic competition. Also covers topics in game theory, uncertainty, investment and capital markets, general equilibrium analysis, externalities and public goods, and markets with asymmetric information.

ECO 407 Macroeconomic Theory
Credits: 3
Prerequisites: MTH 121-MTH 122 or MTH 141-MTH 142
Corequisites: None
Type: SEM
Intermediate level. Uses economic theory to explain the causes of inflation, business fluctuations, unemployment, and economic growth.

ECO 408 Special Topics
Credits: 3
Prerequisites: MTH 121-MTH 122 or MTH 141-MTH 142
Corequisites: None
Type: SEM
Topics vary according to instructor. Requires individual research.

ECO 411 Health Economics
Credits: 3
Prerequisites: ECO 405
Corequisites: None
Type: LEC
Investigates economic behavior of the health-care industry, including hospital services, physicians, and health insurance; and considers rationales for government intervention in planning and insuring.

ECO 412 Environmental Economics
Credits: 3
Prerequisites: ECO 405, ECO 407
Corequisites: None
Type: LEC
Examines uses of the natural environment and their respective costs and benefits (and distributions thereof), and the problem of policy design to optimize environmental use and quality.

ECO 416 Economic Development
Credits: 3
Prerequisites: ECO 405, ECO 407
Corequisites: None
Type: LEC
Studies the issues of poverty, economic development, and economic growth in low-income countries. Introduces diverse aspects of empirical findings in development and offers theories of development and policy implications.

ECO 418 Economics of East Asia
Credits: 3
Prerequisites: ECO 181, ECO 182 and MTH 121-MTH 122 or MTH 141-MTH 142
Corequisites: None
Type: SEM
The world’s fastest-growing economies in the postwar period are clustered in East Asia. Provides, through economic analysis, a deeper knowledge of East Asian economic growth and an understanding of the growth and development process through real-world applications. With the focus on East Asian economies, covers major issues in economic development, theories of growth and convergence, and some current macroeconomic issues of East Asian countries.

ECO 421 Urban Economics
Credits: 3
Prerequisites: ECO 405
Corequisites: None
Type: LEC
Explores theories of the existence and growth of urban economies, location and its relationship to industrial organization and trade, and the internal organization of cities. Further covers land and housing markets; pricing and resource allocation in urban transportation; the economics of local government, local public goods, property taxes, and zoning; and the economics of income and race segregation in urban areas. ECO 421 and ECO 209 cannot both be taken for credit.

ECO 425 Money and Financial Institutions
Credits: 3
Prerequisites: ECO 405
Corequisites: None
Type: LEC
The goal of this course is to enable students to learn the concepts and tools necessary to understand the interconnections between the financial side and the real side of the US economy and how the Fed impacts this through monetary policy.
ECO 426 Capital Markets and Financial Institutions
Credits: 3
Prerequisites: ECO 407
Corequisites: None
Type: LEC
Involves an overview of financial decision making and the functions of financial markets. The course first focuses on financial decisions made by individuals and firms and then investigates the way these decisions are implemented through financial systems. The key concepts are resource allocation over time, evaluation of cash flow, risk management, project evaluation, and asset pricing models.

ECO 434 International Finance
Credits: 3
Prerequisites: ECO 407
Corequisites: None
Type: LEC
Introduces the international financial system; including the spot and forward foreign exchange markets; triangular arbitrage, currency futures, interest arbitrage, the balance of payments, fixed vs. flexible exchange rates, devaluation and the balance of trade, measuring and managing foreign exchange exposure, and import and export financing.

ECO 435 International Economics
Credits: 3
Prerequisites: ECO 405
Corequisites: None
Type: LEC
Introduces advanced topics in international economics and the international monetary system. Focuses on payments, foreign exchange markets, specific-factor models of trade; growth and advantage; modern theories of trade; international factor movements; and the balance of trade, measuring and the balance of trade, measuring and managing foreign exchange exposure, and import and export financing.

ECO 436 Marxist Economic Theory
Credits: 3
Prerequisites: ECO 181 and MTH 121- MTH 122 or MTH 141-MTH 142
Corequisites: None
Type: LEC
In-depth investigation of the Marxist theory of capitalism, centering on value and surplus value, accumulation of capital, and class struggle; also, this course considers the theory of pre-capitalist societies.

ECO 440 Economics of Education
Credits: 3
Prerequisites: ECO 405
Corequisites: None
Type: LEC
Analyzes various educational policies. Topics include returns to education, economics of class size, school quality effects, cognitive test achievements, school performance assessment, student dropout behavior and post-schooling labor market experience. This course is not aimed at addressing all questions in the economics of education. Instead, it provides basic concepts, tools, and economic intuition in addressing various educational issues from an economic point of view. Students should be able to apply these concepts and tools to other educational policy issues after completing this course.

ECO 443 Labor Economics
Credits: 3
Prerequisites: ECO 405, ECO 407
Corequisites: None
Type: SEM
Studies wage theory and the institutions that affect the supply of and demand for labor. Also examines wage differentials and such policy problems as unemployment, discrimination, and government regulation of wage-setting institutions.

ECO 444 Human Resource Economics
Credits: 3
Prerequisites: ECO 405, ECO 407
Corequisites: None
Type: LEC
Explores relationships among the techniques of human-capital formation (education, on-the-job training, financing, human-capital maintenance, health care, and job safety), human-capital mobility (occupational information, relocation), and economic performance.

ECO 451 Math for Economists
Credits: 3
Prerequisites: MTH 121-MTH 122 or MTH 141-MTH 142
Corequisites: None
Type: LEC
Discusses mathematical techniques used in economic analysis, including optimization theory, consumer and producer optimization problems, and general equilibrium models.

ECO 455 Information and Internet Economics
Credits: 3
Prerequisites: ECO 405, ECO 407
Corequisites: None
Type: LEC
Focuses on economic issues involving both information and Internet technology. On the information side, the course covers the value of information, issues that arise from information asymmetry, and costs of producing and distributing information. On the technology side, it discusses business implications of the Internet by introducing topics concerning market structure, entry barriers, and conduct and performance of firms. Also addresses issues concerning patents and copyrights in the context of electronic commerce. In addition to discussions and lectures, the course relies on cases, guest speakers, and student projects.

ECO 461 Economic Fluctuation and Forecasting
Credits: 3
Prerequisites: ECO 405, ECO 407
Corequisites: None
Type: SEM
Analyzes the economic criteria for regulatory policies and the effects of regulation in various sectors of the economy.

ECO 462 Economics of Legal Relationships: Property Rights
Credits: 3
Prerequisites: ECO 405
Corequisites: None
Type: LEC
Analyzes the emergence of ownership and such policy issues as transfer, assignment, and protection of property rights systems.

ECO 468 Economics of Sports
Credits: 3
Prerequisites: ECO 405, ECO 407
Corequisites: None
Type: LEC
Investigates economics of the sports industry; including league rules and formation, salaries of players, and TV and gate receipts as a general equilibrium model.

ECO 469 Industrial Organization
Credits: 3
Prerequisites: ECO 405
Corequisites: None
Type: SEM
Studies structure of industries and firms in American and other advanced economies; price and production policies, relationships among structure, competition, and efficiency.

ECO 476 Economics of Legal Relationships: Property Rights
Credits: 3
Prerequisites: ECO 405
Corequisites: None
Type: LEC
Analyzes the emergence of ownership and property rights and the effects of these on the production and distribution of products; also compares different property rights systems.

ECO 480 Econometrics I
Credits: 4
Prerequisites: MTH 121-MTH 122 or MTH 141-MTH 142
Corequisites: None
Type: SEM/DIS
Covers measures of central tendency and spread in economic data, probability, binomial and normal distributions, estimation, confidence intervals, testing of hypotheses, and analysis of variance. Also introduces and applies simple two-variable regression to real-world data using computer software.
ECO 481 Econometrics II
Credits: 3
Prerequisites: ECO 480 or permission of instructor
Corequisites: None
Type: LEC
Involves an in-depth analysis of basic general linear regression and several of its commonly used variants which allow for dummy variables, interaction terms, serial correlation, and heteroscedasticity, among other things. Additional topics include estimation and forecasting in the context of econometric time-series models, as well as simultaneous equation models. The course also covers index numbers and Chi-Square tests of independence in contingency models. Emphasizes empirically implementing most of the models on real-world data using standard computer software.

ECO 482 Computational Econometrics
Credits: 3
Prerequisites: ECO 480; ECO 481 recommended
Corequisites: None
Type: LEC
Uses SAS to demonstrate ways to analyze economic data utilizing various econometric techniques. Topics covered include basic linear regression models, binary choice models, and time series and simultaneous equation models. SAS programs are run, using real data. No prior knowledge of SAS is necessary.

ECO 490 Monetary Theory
Credits: 3
Prerequisites: ECO 407
Corequisites: None
Type: LEC
Presents an advanced theory of money and its effect upon interest rates, prices, employment, and output.

ECO 493 Topics in International Economics
Credits: 3
Prerequisites: ECO 405, ECO 407
Corequisites: None
Type: LEC
Presents special topics of current interest, such as an overview of recent developments in trade theory, optimal trade and industrial policies in models with imperfect competition, issues in current trade negotiations, issues in services trade, global e-commerce, economic globalization, GATT and the WTO, free trade areas, customs unions, regionalism vs. multilateralism, the European Union (EU), and the future world monetary system.

ECO 495 Undergraduate Supervised Teaching
Credits: 3
Prerequisites: Details available at the department office
Corequisites: None
Type: TUT
Students who have at least junior status and satisfy the department's prerequisites may apply to serve as undergraduate teaching assistants for ECO 181 and ECO 182. Under the supervision of the professor, undergraduate teaching assistants lead discussion sections for the principles courses, reviewing core concepts and theories, answering questions from the students, and participating in the preparation of final grades.

ECO 496 Internship in Economics
Credits: 3
Prerequisites: ECO 405, ECO 407, and a minimum B average in economics
Corequisites: None
Type: TUT
Students arrange an internship in the private or public sector. As long as this position has a strong economics content, the student can apply to the director of undergraduate studies in economics for internship credit. Application must be made in advance and must be approved by the director of undergraduate studies.

ECO 498 Undergraduate Research
Credits: 3
Prerequisites: A minimum GPA of 3.0 in Economics and permission of the instructor
Corequisites: None
Type: TUT
Students have the opportunity to participate in faculty research projects or to conduct their own original research under the supervision of a faculty mentor, thereby gaining first-hand experience in economic research. Interested students should consult the Director of Undergraduate Studies or, if known, the faculty member with whom they wish to conduct research.

ECO 499 Independent Study
Credits: 1
Prerequisites: B average in all economics courses taken, a written project proposal, and a faculty member's prior approval and sponsorship of the project
Corequisites: None
Type: TUT
Involves development of an individual project of inquiry into an economics area of particular relevance to the student's interest, and in a topic or depth not currently offered through regular coursework.

ECO 499 Undergraduate Supervised Teaching
Credits: 3
Prerequisites: Details available at the department office
Corequisites: None
Type: TUT
Students who have at least junior status and satisfy the department's prerequisites may apply to serve as undergraduate teaching assistants for ECO 181 and ECO 182. Under the supervision of the professor, undergraduate teaching assistants lead discussion sections for the principles courses, reviewing core concepts and theories, answering questions from the students, and participating in the preparation of final grades.

Education Minor

LAI 205 Introduction to Child Development and Learning
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Intended for students contemplating a career in education. Provides information and a forum for discussion of American education. Among the topics covered are a brief history of American education, the learning environment, teachers, diverse learners (ethnically, economically, and of differing abilities), classroom management, and issues facing all schools. In addition, students become generally familiar with the New York State Learning Standards. A group school visit is also a course component as are 20 supervised classroom contact hours.

LAI 350 Introduction to Education
Credits: 4
Prerequisites: None
Corequisites: None
Type: LEC
Introduces the field of rehabilitation counseling and its application to substance abuse and addiction. Examines the social, psychological, and biological bases of addiction; assessment, diagnosis, and treatment issues; and understanding of the functional limitations of substance addiction, especially as they relate to work and independent living.

ELP 405 Sociology of Education
Credits: 3
Prerequisites: LAI 350
Corequisites: None
Type: LEC
Students examine and clarify a number of the important concepts and principles in terms of which core educational issues can be understood; e.g., intelligence and rationality, perception and bias, authority, and socialization. Students also explore common assumptions about knowledge, values, and human nature that underlie educational theories and practices. In addition, students examine the influence of diverse cultural perspectives, personal beliefs, and values on several essential aspects of teaching; e.g., an appreciation of distinctive learning styles, and the hidden curriculum.

LAI 414 Language, Cognition, and Writing
Credits: 3
Prerequisites: LAI 350
Corequisites: None
Type: SEM
Introduces the field of rehabilitation counseling and its application to substance abuse and addiction. Examines the social, psychological, and biological bases of addiction; assessment, diagnosis, and treatment issues; and understanding of the functional limitations of substance addiction, especially as they relate to work and independent living.

ECO 496 Internship in Economics
Credits: 3
Prerequisites: None
Type: LEC
Introduces the field of rehabilitation counseling and its application to substance abuse and addiction. Examines the social, psychological, and biological bases of addiction; assessment, diagnosis, and treatment issues; and understanding of the functional limitations of substance addiction, especially as they relate to work and independent living.

ECO 496 Internship in Economics
Credits: 3
Prerequisites: None
Type: LEC
Introduces the field of rehabilitation counseling and its application to substance abuse and addiction. Examines the social, psychological, and biological bases of addiction; assessment, diagnosis, and treatment issues; and understanding of the functional limitations of substance addiction, especially as they relate to work and independent living.

ECO 496 Internship in Economics
Credits: 3
Prerequisites: None
Type: LEC
Introduces the field of rehabilitation counseling and its application to substance abuse and addiction. Examines the social, psychological, and biological bases of addiction; assessment, diagnosis, and treatment issues; and understanding of the functional limitations of substance addiction, especially as they relate to work and independent living.

ECO 496 Internship in Economics
Credits: 3
Prerequisites: None
Type: LEC
Introduces the field of rehabilitation counseling and its application to substance abuse and addiction. Examines the social, psychological, and biological bases of addiction; assessment, diagnosis, and treatment issues; and understanding of the functional limitations of substance addiction, especially as they relate to work and independent living.
LAI 416 Early Childhood Educational Theory and Practice

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Undergraduate students explore their role as reflective teachers. Examines curriculum based on early childhood theories. Teaches methods of designing appropriate EC environments, and examines the teacher’s role in documenting children’s learning. Guides students toward active membership and involvement in professional organizations.

CEP 453 Introduction to Rehabilitation

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Explores basic history, concepts, and practices in the rehabilitation of persons with physical, mental, or emotional disabilities. Emphasizes modern vocational rehabilitation, and considers rehabilitation careers.

LAI 474 Teaching the Exceptional Learner

Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Aids in understanding diversity by preparing teachers to offer direct and indirect services to students within the full range of disabilities and special health-care needs in inclusive environments. Students are provided with techniques designed to enhance academic performance, classroom behavior, and social acceptance for students with disabilities and special needs. Students learn skills enabling them to (1) differentiate and individualize instruction for students with disabilities and special needs, (2) become familiar with instructional and assistive technologies, (3) implement multiple research-validated instructional strategies, (4) formally and informally assess learning of diverse students, (5) manage classroom behavior of students with disabilities and special needs, and (6) collaborate with others and resolve conflicts to educate students with disabilities and special needs.

LAI 490 Seminar and Practicum in Early Childhood Programs

Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Actively involves students, one morning or afternoon per week, in a preschool classroom experience at the Early Childhood Research Center. Offers students guided learning experience as teachers in a NAECYC accredited preschool multicultural setting. The weekly one-hour seminar provides the support needed by teachers in understanding and applying a constructive play curriculum, which fosters children’s social, emotional, physical and cognitive development. Child observation and naturalistic assessment are major course components.

Electrical Engineering

EE 101 Basic Electronics

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC/LAB
Introductory electronics course for engineering and science majors. Emphasizes analog and digital electronic systems organization, data acquisition, and signal transmission. A laboratory once a week illustrates these techniques by specific circuit devices.

EE 200 Electrical Engineering Concepts/Non-majors

Credits: 3
Prerequisites: PHY 108
Corequisites: MTH 306
Type: LEC
Introduces aspects of electrical engineering useful to all the engineering disciplines. Course material includes basic circuit analysis and networks, frequency response, elementary solid-state electronics, digital circuits, and energy conversion and transmission. Not intended for electrical or engineering physics majors. Students may not receive credit for this and EE 202.

EE 202 Circuit Analysis I

Credits: 4
Prerequisites: None
Corequisites: MTH 306, PHY 108
Type: LEC/REC
Systematic development of network analysis methods. Topics include resistive circuits, Kirchhoff’s laws, equivalent subcircuits; dependent sources and op amps; loop and nodal analysis and duality; energy-storage elements; transient analysis of first-order and second-order circuits.

EE 203 Circuit Analysis II

Credits: 4
Prerequisites: EE 202
Corequisites: None
Type: LEC/REC
A continuation of EE 202. Brief review of basic concepts of time-domain circuit analysis; phasor analysis of steady-state ac circuits; complex power and three-phase systems; Laplace transform techniques and ‘s-domain’ circuit analysis; transfer function; linear circuit design. Selected problem assignments and a final design project require use of circuit analysis software tools.

EE 301 Electronic Devices and Circuits I

Credits: 3
Prerequisites: EE 202
Corequisites: EE 312 or EE 352
Type: LEC/REC
Electronic devices, including operational amplifiers, diodes, bipolar junction transistors and field-effect transistors, the basic circuits in which these devices are used, and computer-aided circuit analysis for these devices and circuits.

EE 311 Electronic Devices and Circuits II

Credits: 3
Prerequisites: EE 310
Corequisites: None
Type: LEC/LAB
Differential and multistage amplifiers with bipolar junction transistors (BJT) and field-effect transistors (FET). Biasing in integrated circuits and active loads. Frequency response of common-emitter (common-source), common-base (common-gate), common-collector (common-drain) single BJT (FET) stages. Frequency response of differential-pair, cascode, and multistage circuits. Selection of coupling and bypass capacitors. Analog integrated circuits. Metal-Oxide-Semiconductor (MOS) digital circuits with emphasis on CMOS.

EE 312 Basic Electronic Instrumentation Laboratory

Credits: 2
Prerequisites: EE 202
Corequisites: EE 310
Type: LEC/LAB
Trains students how to design, build, diagnose, and characterize electronic circuits. Topics include instrumentation, semiconductor devices, and electronic circuits. Covers both analog and digital circuits. Laboratory projects include filters, operational amplifiers, dc power supply, MOSFET amplifier, BJT amplifier, logic gates, timing, and counters.

EE 324 Applied Electromagnetics

Credits: 4
Prerequisites: EE 202, MTH 241, PHY 108
Corequisites: None
Type: LEC/REC
Topics include vector calculus; electric fields; charge distributions; dielectrics, energy, forces in the presence of dielectrics; Laplace’s and Poisson’s equations; magnetostatics; Faraday’s induction law; time-dependent phenomena; waves.
EE 340 Nanotechnology, Engineering, and Science

Credits: 3
Prerequisites: PHY 107, PHY 108, PHY 207, MTH 241
Corequisites: EE 342
Type: LEC/REC
Through the examples, exercises, and educational Java applets, this course covers the electrical and optical properties of materials and nanostructures, chemically-directed assembly of nanostructures, biomolecules, traditional and nontraditional methods of nanolithography, heterostructures, nanotubes, resonant-tunneling diodes, transistors, single-electron transfer devices, nano- electromechanical systems, and more.

EE 342 Nanotechnology Engineering and Science Lab

Credits: 1
Prerequisites: EE 240 and MTH 241
Corequisites: None
Type: LAB
The laboratory course consists of ten experiments, divided into two groups: five Scanning Probe Microscope experiments and five experiments devoted to phenomena that form the basis for modern Nanoelectronics and Nanotechnology. A complete set of laboratory experimental modules delivers to students a hands-on experience in this field.

EE 352 Introduction to Electronics Lab

Credits: 3
Prerequisites: EE 202 and EE 203
Corequisites: EE 310
Type: LEC/LAB
Trains students how to design, build, diagnose, and characterize electronic circuits. Topics include instrumentation, semiconductor devices, and electronic circuits. Covers both analog and digital circuits. Laboratory projects include filters, operational amplifiers, diodes, dc power supply, ac power control, MOS-FET amplifier, BIT amplifier, logic gates, timing, and counters.

EE 353 Electronic Circuits Lab

Credits: 3
Prerequisites: EE 352
Corequisites: EE 311
Type: LEC/LAB
An engineering design lab. Fifty-minute lecture and 30-minute lab per week. Involves analyzing and designing single and multistage electronic circuits using SPICE and use their knowledge of analog circuits to complete the projects.

EE 378 Digital Principles

Credits: 3
Prerequisites: EE 202
Corequisites: EE 310
Type: LEC
Topics include number systems; arithmetic; codes; Boolean algebra; minimization techniques; logic design; programmable logic devices; memory devices; registers; counters; synchronous sequential networks.

EE 401 RF and Microwave Circuits I

Credits: 3
Prerequisites: EE 203
Corequisites: None
Type: LEC
The first of a two-course sequence in the area of RF and microwave circuit design. Initial topics include transmission line equations, reflection coefficient, VSWR, return loss, and insertion loss. Examples include impedance matching networks using lumped elements, single-section and multi-section quarter wave transformers, single-stub and double-stub tuners, the design of directional couplers, and hybrids. There is a student design project for a planar transmission line circuit based upon the software package Microwave Office. The design is fabricated and tested.

EE 403 Introduction to Plasma Processing

Credits: 3
Prerequisites: MTH 242 or MTH 306; PHY 108
Corequisites: None
Type: LEC
Introduces plasma processing including plasma deposition, plasma etching, gaseous electronics, gas lasers and plasma materials processing. Topics include basic atomic theory, elementary kinetic theory of gases, motion of charges in electric and magnetic fields, plasma properties, plasma generation and devices, plasma-surface interactions, electrodes and discharge characteristics, plasma diagnostics and plasma simulation. Students prepare web-based presentations in current plasma technologies with focus on applications in electrical engineering field.

EE 408 Senior Seminar

Credits: 1
Prerequisites: None
Corequisites: None
Type: SEM
Covers the ethical, social, economic, and safety considerations in engineering practice essential for a successful engineering career.

EE 410 Electronic Instrument Design I

Credits: 4
Prerequisites: EE 310
Corequisites: None
Type: LEC/LAB
Design of electronic instruments, with emphasis on the use of analog and digital integrated circuits. Topics include techniques for precise measurements; sensors and their use for measurement of temperature, displacement, light, and other physical quantities; active and passive signal conditioning; and power supplies. Individuals or groups design and demonstrate an instrument, and provide a written report.

EE 413 Communication Electronics

Credits: 4
Prerequisites: EE 352 and EE 353
Corequisites: None
Type: LEC/LAB
Examines operation and signaling in communications systems with a strong emphasis on circuits. Covers radio frequency systems (AM, FM, TV), telephone switching systems, microwave/ wireless systems, fiber optics, modulation schemes, coding, multiplexing/demultiplexing, protocols, and networking. Discusses both analog and digital/data communication systems. Requires students to complete a capstone design project.

EE 415 Microelectromechanical Systems

Credits: 3
Prerequisites: EAS 305
Corequisites: None
Type: LEC
Intended for first-year graduate students. Silicon-based integrated MEMS promise reliable performance, miniaturization and low-cost production of sensors and actuator systems with broad applications in data storage, biomedical systems, inertial navigation, micromanipulation, optical display and microfluid jet systems. The course covers such subjects as materials properties, fabrication techniques, basic structure mechanics, sensing and actuation principles, circuit and system issues, packaging, calibration, and testing.

EE 416 Signal Processing Algorithms

Credits: 3
Prerequisites: EE 303 or permission of instructor
Corequisites: EAS 305
Type: LEC/REC
Signals and samples, the z-transform. The discrete Fourier transform. Frequency and time-domain response of filters. Digital filter design, FIR and IIR filters. Digital filter structures. Multi-rate filters and signals. Fast convolution and correlation algorithms. Interdisciplinary aspects: VLSI for DSP, SAW and CCD devices; computational aspects. Heavy design experience with signal processing software. Students are expected to complete several design studies and a final project in the areas of digital filter design and signal processing algorithms. Matlab or similar packages are to be used both in the design process as well as in verification of design objectives.

EE 418 Quantum Mechanics for Engineers

Credits: 3
Prerequisites: Senior Standing
Corequisites: None
Type: LEC
Relation to classical mechanics, wave properties, Schrodinger equation, finite barrier potentials, tunneling, perturbation theory, nano-scale devices.

EE 419 Industrial Control Systems

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC/REC
An application-oriented course to introduce students to the basic principles and concepts employed in analysis and synthesis of modern-day analog and microcomputer control systems. Topics include: review of vectors, matrices, and Laplace transforms, followed by introduction to block diagram, signal flow graph, and state-variable representation of physical systems, network and linear graph techniques of system modeling; time-domain, frequency domain, and state-space analysis of linear control systems, control concepts in multivariable systems, hierarchy of control structures, design of analog and digital controllers.
EE 421 Semiconductor Materials
Credits: 3
Prerequisites: EE 310
Corequisites: None
Type: LEC
Reviews semiconductor materials properties that are important for device operation. Also, discusses semiconductor devices along with important materials properties for each device. Reviews the device models employed in SPICE circuit simulations. Uses several SPICE simulation projects to learn about the SPICE device models and about the effect of materials properties on the device performance and circuit operation. Devices covered are: pn junction diode; SPICE pn junction diode models and model parameters; MOS field effect transistor, SPICE MOSFET models and model parameters; CMOS integrated circuits; bipolar transistor fundamentals; SPICE BJT models and model parameters; MS junction; mesfet; jfet; SPICE models; PSPICE or HSPICE simulations of semiconductor devices.

EE 422 Nanomaterials
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
The recent emergence of fabrication tools and techniques capable of constructing nanometer-sized structures has opened up numerous possibilities for the development of new devices with size domains ranging from 0.1 - 50 nm. The course introduces basic single-charged electronics, including quantum dots and wires, single-electron transistors (SETs), nanoscale tunnel junctions, and so forth. Giant magnetoresistance (GMR) in multilayered structures are presented with their applications in hard disk heads, random access memory (RAM) and sensors. Discusses optical devices including semiconductor lasers incorporating active regions of quantum wells and self-assembled formation of quantum-dot-structures for new generation of semiconductor layers. Finally, devices based on single- and multi-walled carbon nanotubes are presented with emphasis on their unique electronic and mechanical properties that are expected to lead to ground breaking industrial nanodevices. The course also includes discussions on such fabrication techniques as laser-ablation, magnetron and ion beam sputter deposition, epitaxy for layer structures, rubber stamping for nanoscale wire-like patterns, and electroplating into nanoscale porous membranes.

EE 424 Introduction to Nanoelectronics, Nanostructure Physics, and Applications
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Covers 2-D electron systems, quantum wires and dots, ballistic transport, quantum interference, and single-electron tunneling.

EE 425 Electrical Devices I
Credits: 4
Prerequisites: EE 203 or EE 324
Corequisites: None
Type: LEC/LAB
Principles of electromagnetic energy conversion with applications to motors and generators. Topics include magnetic circuits, transformers, hysteresis, field energy, dc and ac motors. Students learn the basic fundamentals of electro-mechanical energy conversion. Design project with laboratory validation accounts for 50 % of grade.

EE 428 BioMEMS and Lab-on-a-Chip
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Covers various commonly used micro/nanofabrication techniques, microfluidics, various chemical and biochemical applications such as separation, implantable devices, drug delivery, and microsystems for cellular studies and tissue engineering. Discusses recent and future trends in BioMEMS and nanosensors. Students will gain a broad perspective in the area of micro/nano systems for biomedical and chemical applications.

EE 429 Introduction to Electromagnetic Compatibility
Credits: 3
Prerequisites: None
Corequisites: EE 324
Type: LEC
EMC deals with interference in electronic systems. For senior and first-year graduate students and industrial professionals who have an interest in designing electronic systems that comply with current commercial and military standards on EMC such as the FCC Part 15 and CISPR 22. Both specify limits on radiated and conducted emissions for digital devices which are defined as any electronic device that has digital circuitry and uses a clock signal in excess of 9 kHz. Student projects designed in electronic instrumentation classes without consideration of the limits imposed by these standards would fail to meet the current standards and as a result could not be marketed in the United States or Europe.

EE 430 Fundamentals of Solid State Devices
Credits: 3
Prerequisites: EE 421
Corequisites: None
Type: LEC
Develops an understanding of the operation of different semiconductor devices, starting from a quantitative knowledge of semiconductor properties.

EE 431 Introduction to Semiconductor Technology
Credits: 3
Prerequisites: EE 203 or EE 324
Corequisites: None
Type: LEC/LAB
Principles of electromagnetic energy conversion with applications to motors and generators. Topics include magnetic circuits, transformers, hysteresis, field energy, dc and ac motors. Students learn the basic fundamentals of electro-mechanical energy conversion. Design project with laboratory validation accounts for 50 % of grade.

EE 438 : Electrochemical Power Sources: Design, Function, And Selection
Credits: 3
Semester: SP
Prerequisites: CHE 101, CHE 105, or CHE 107 and PHY 107 or equivalent
Corequisites: None
Type: LEC
An introduction to the fundamentals of electrochemistry. Batteries as electromechanical power sources including: battery related terminology, quantitative assessment and comparison methodologies, design considerations for batteries, the chemistry and function of several classes of primary (single use) and secondary (rechargeable) battery types, and appropriate selection of power sources for applications. Students participate in design projects including the development of power systems for specific applications.

EE 441 Special Topics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Topics and instructors vary by semester.

EE 442 Nanoscale Porous Membranes
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Covers various commonly used micro/nanofabrication techniques, microfluidics, various chemical and biochemical applications such as separation, implantable devices, drug delivery, and microsystems for cellular studies and tissue engineering. Discusses recent and future trends in BioMEMS and nanosensors. Students will gain a broad perspective in the area of micro/nano systems for biomedical and chemical applications.

EE 443 Java Applet Modeling for Visual Engineering Simulation
Credits: 3
Prerequisites: Experience in programming with a high-level language (e.g., C)
Corequisites: None
Type: LEC
Object-oriented analysis, design and programming. Introduces Java syntax, application programmers interface (API), object-oriented programming concepts including encapsulation, inheritance, and polymorphism, and multi-threaded programming including thread synchronization and control. Also introduces graphical programming API and effective graphical programming techniques. Applies all these concepts and techniques to the student-chosen, engineering simulation projects. Emphasizes software engineering processes such as architectural design, unit refinement cycles and code reuse throughout the semester. For the project, requires students to develop a reusable class library consisting of at least three packages: a graphical drawing package, a problem simulation package, and a visual presentation package.

EE 444 Microelectronic Device Fabrication
Credits: 3
Prerequisites: EE 311
Corequisites: None
Type: LEC
Fabrication technology for microelectronic devices: crystal growth, wafer fabrication and characterization, mask fabrication, epitaxy, lithography, etching, diffusion, CVD, ion implantation, and RF plasma reactors (operating principles and fabrication applications), packaging. Operation of microelectronic devices (interconnects, passive devices, and MOS and BJT devices), micro-optical devices (CDRs, etc.) and micro-electromechanical devices (micro-motors, micro-mirror arrays, etc). Students select a part of the fabrication process (lithography, diffusion, etc.) and use simulation code to design that step of the process to achieve specific device properties.

EE 445 Analog Integrated Circuit Layout
Credits: 3
Prerequisites: EE 311
Corequisites: None
Type: LEC
Introduces analog integrated circuit fabrication and layout design for analog VLSI. Covers: representative IC fabrication processes (standard bipolar, CMOS and analog BiCMOS); layout principles and methods for MOS transistors and device matching; resistors and capacitors; layout; matched layouts of R and C components; bipolar transistors and bipolar matching; and diodes. Also reviews several active-loaded analog amplifier circuits, focusing on CMOS and BiCMOS op amp configurations. Requires a term project on the layout design of simple op amp circuits involving CMOS or BiCMOS op amps plus several matched devices of resistors, capacitors and transistors. Students design circuits using SPICE simulations. The student term project is to be fabricated through MOSIS.

EE 450 Special Topics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Topics and instructors vary by semester.

EE 453 Microelectronic Fabrication Lab
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC/LAB
Provides students with the experience of fabricating a semiconductor device. Students become versed in fabrication techniques used in the microelectronics industry. Required student activities include mask design, chemical processing, operation of cleaning equipment, and testing of the final device. Also requires a report.

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EE 455 Photonic Devices

Credits: 3  Prerequisites: EE 311  Corequisites: None  Type: LEC
First, discusses the basics of p-n junctions including current flow, and recombination. In addition, discusses solar cell fundamentals, heterojunctions, metal-insulator-semiconductor devices, design, and recent advances. The course ends with a discussion of photodetector principles, design, and applications.

EE 456 RF and Microwave Circuits II

Credits: 3  Prerequisites: EE 401 or permission of instructor  Corequisites: None  Type: LEC
The second course of a two-course sequence in the area of RF and microwave circuit design. Topics covered are filters, resonators, detectors, mixers, amplifiers, and microwave systems. Microwave Office is used for CAD analysis of circuits. Students design, construct, fabricate, and measure the performance of a microstrip resonator, a microstrip or stripline directional coupler, and a filter.

EE 458 RF/Microwave Laboratory

Credits: 3  Prerequisites: EE 401 or EE 429 or permission of instructor  Corequisites: None  Type: LAB/REC
Covers RF & microwave measurement techniques in the 1 MHz to 18 GHz frequency region. Topics include assembling basic measurement systems, including attenuators, directional couplers, power dividers, terminations, power sensors, solid-state detectors, mixers, power meters, and signal generators; measuring the reflection and transmission coefficients at discrete frequencies; making similar measurements (magnitude only) over a band of frequencies using a swept power measurement system consisting of a spectrum analyzer with tracking generator; vector measurements (magnitude and phase) versus frequency using RF & microwave automatic network analyzers.

EE 459 Special Topics in Electrical Engineering

Credits: 3  Prerequisites: permission of instructor and student's advisor  Corequisites: None  Type: LEC
Special topics of particular recent interest not covered in the standard curriculum. Requires dual registration in department office.

EE 460 Current Research Topics of Power Modulation Applications

Credits: 3  Prerequisites: permission of instructor and student's advisor  Corequisites: None  Type: LEC
Involves a design project based on pulsed power that utilizes the fundamentals needed to become a successful engineer in the business world. Pulsed power focuses on achieving high peak powers by impulse and rep-rate methods. Topics in this area of research include switching, surface flashover of insulators, and other related areas. Students form Integrated Project Teams to work on their projects and address the relevant issues in a multidisciplinary (electrical engineering) team. Student grades are based on peer reviewed effort, technical reports, and oral presentations.

EE 461 Principles of Medical and Radar Imaging

Credits: 3  Prerequisites: EE 303  Corequisites: None  Type: LEC
Applications of multidimensional signal theory and Fourier analysis. Topics include review of signal processing tools and systems used in array imaging, including coherent receivers, pulsed and continuous wave imaging, coherent Doppler phenomenon, and nonmonostatic, quasi-monostatic, bistatic transmitters/receivers, and 2-D signal processing; examining specific system imaging systems, including phased array imaging, synthetic aperture (SAR and ISAR) imaging, passive array imaging, and bistatic array imaging with emphasis on transmission imaging problems of diagnostic medicine and geophysical exploration.

EE 465 Current Research Topics of Pulsed Power Applications

Credits: 3  Prerequisites: None  Corequisites: None  Type: LEC/LAB
Involves a design project based on pulsed power that utilizes the fundamentals needed to become a successful engineer in the business world. Pulsed power focuses on achieving high peak powers by impulse and rep-rate methods. Topics in this area of research include switching, surface flashover of insulators, and other related areas. Students form Integrated Project Teams to work on their projects and address the relevant issues in a multidisciplinary (electrical engineering) team. Student grades are based on peer reviewed effort, technical reports, and oral presentations.

EE 467 High-Voltage Engineering

Credits: 3  Prerequisites: EE 203, EE 482  Corequisites: None  Type: LEC
Topics include introduction to high-voltage engineering; generation of high voltages (AC, DC, impulse, pulse); measurements of high voltages; destructive and nondestructive insulation test techniques; shielding and grounding; electrical shock and safety. Paper in a related high-voltage area and an in-class presentation required.

EE 475 Digital Signal Processing

Credits: 3  Prerequisites: EE 378  Corequisites: None  Type: LEC
Topics include analysis and design of clocked synchronous sequential networks; designs of arithmetic state machines; analysis and design of asynchronous sequential networks; CPLDs and FPGAs; CAD tools; introduction to VHDL.

EE 480 Biomedical Electronics

Credits: 3  Prerequisites: None  Corequisites: None  Type: LEC
Covers the principles and designs of various important biomedical instruments including pacemaker, EEG, ECG, EMG, and ICU equipment and diagnostic imaging devices such as blood bank monitor, CT, MRI, mammography, ultrasound, endoscope, confocal microscopy, and multiphoton nonlinear microscope, and medical image processing are also covered. Includes a general introduction to biological systems; emphasizes the structural and functional relationship between various biological compartments.

EE 482 Power Systems Engineering I

Credits: 4  Prerequisites: EE 203 or EE 324  Corequisites: None  Type: LEC/LAB
Surveys the field of modern energy systems, with the foundation being classical electrical power and related power electronics. Topics include complex power, per unit analysis, transmission line parameters and modeling, and compensation. Students also study alternative energy systems in this course. Course also includes use of a Power Simulation Program in which modeling can be done. This program is also used for the final system design project paper which accounts for 50% of the course grade.

EE 483 Communications Systems I

Credits: 4  Prerequisites: EE 303  Corequisites: EAS 305  Type: LEC/LAB
Fourier transforms and spectra; linear filters; transmission of signals through linear systems; bandpass signals; band-pass systems; continuous wave modulation; amplitude modulation (AM); double sideband modulation (DSB); single sideband modulation (SSB), phase modulation (PM); frequency modulation (FM); quadrature amplitude modulation (QAM); frequency division multiplexing (FDM); demodulation of analog modulated signals; random variables; statistical averages; random processes; autocorrelation and power spectral density; stationarity; transmission of random processes through linear systems; white noise; colored noise; Gaussian noise; noise in continuous wave modulation systems; signal-to-noise-ratio (SNR); sampling; pulse amplitude modulation (PAM).

EE 484 Communications Systems II

Credits: 3  Prerequisites: EE 483  Corequisites: None  Type: LEC
Topics include review of PAM-, PDM-, PPM-pulsed modulation techniques; principles of digital communications; pulse code modulation; signal quantization; binary communications systems; M-ary communications systems; detection and parameter estimation for pulses in noise; the likelihood ratio receiver; and applications to radar signal processing.

EE 488 VLSI Devices

Credits: 3  Prerequisites: EE 311  Corequisites: None  Type: LEC
Device fundamentals of CMOS field effect transistors and BiCMOS bipolar transistors. Device parameters and performance factors important for VLSI devices of deep-submicron dimensions. Reviews silicon materials properties, basic physics of p-n junctions and MOS capacitors, and fundamental principles of MOSFET and bipolar transistors. Design and optimization of MOSFET and bipolar devices for VLSI applications. Discusses interdependence and tradeoffs of device parameters pertaining to circuit performance and manufacturability. Also discusses effects in small-dimension devices: quantization in surface inversion layer in a MOSFET device, heavy-doping effect in the bipolar transistor, etc.
EE 489 Lasers and Photonics

Credits: 4  
Prerequisites: EE 311  
Corequisites: None  
Type: LEC/LAB  
Topics include an introduction to lasers and photonics; a short review of electromagnetic theory; ray tracing and lens systems; polarization of light and polarization modulators; Gaussian beams and wave propagation; optical resonators and cavity stability; spontaneous emission, stimulated emission and absorption; rate equations for gain medium; population inversion; characteristics and applications of specific lasers; waveguides and fiber optics; fiber optic communication systems; electro-optic modulators; and acoustic-optic modulators. Requires students to complete a project focusing on the design of a laser system including choice of gain medium, cavity optics, pumping mechanism, power and efficiency estimates, and cost analysis. Requires reports and presentations.

EE 490 Consumer Optoelectronics

Credits: 4  
Prerequisites: None  
Corequisites: None  
Type: LEC/LAB  
Introduces optoelectronic systems. This design course emphasizes the interaction of optics, lasers, mechanics, electronics, and programming. It requires students design an optoelectronic system with a strong emphasis on team learning and teaching. Some topics of interest include: design methodology; team dynamics; light sources and detectors; light propagation; lens and mirrors; electro optics; interaction of light with materials; nonlinear optics for harmonic generation; optical detection and modulation; and discussion of selected optoelectronic devices and applications such as CD players, DVD display systems, semiconductor lasers and light emitting diodes, laser printers, barcode scanners, digital cameras, optical coherence tomography, flow cytometry, interferometric systems and optical communications. Requires project proposal, progress reports and presentations and final written reports and presentations.

EE 491 Analog Circuits

Credits: 3  
Prerequisites: EE 311  
Corequisites: None  
Type: LEC  
Focuses on the analysis, design, simulation and mask-level chip layout of integrated analog circuits and systems. Begins with a brief review of MOSFET operation and large and small signal models. Much of the course involves designing and analyzing analog building blocks such as current mirrors, transconductance amplifiers, capacitors, multipliers, current mirrors and D/A and A/D circuits. Simultaneously, the course covers IC design and layout techniques and system analysis. It concludes by looking at sensor applications. Requires a final project consisting of a complete IC layout. Students may have the opportunity to fabricate their final project through MOSIS.

EE 494 Senior Capstone Design Project

Credits: 3  
Prerequisites: senior standing or permission of instructor  
Corequisites: None  
Type: SEM  
Students design a useful device or product based on knowledge acquired in previous electrical engineering courses. Students have the option of creating their own projects or selecting projects from a list suggested by industrial and faculty sources.

EE 499 Independent Study

Credits: 1  
Prerequisites: permission of instructor and student's advisor  
Corequisites: None  
Type: TUT  
Independent study allows individualized guidance of a faculty member; allows students to study a particular topic that is not offered in the curriculum but is of interest to both the student and faculty member. Requires dual registration in department office.

EE 504 Linear Systems

Credits: 3  
Prerequisites: EE 440  
Corequisites: None  
Type: LEC  
Focuses on the analysis, design, simulation and mask-level chip layout of integrated analog circuits and systems. Begins with a brief review of MOSFET operation and large and small signal models. Much of the course involves designing and analyzing analog building blocks such as current mirrors, transconductance amplifiers, capacitors, multipliers, current mirrors and D/A and A/D circuits. Simultaneously, the course covers IC design and layout techniques and system analysis. It concludes by looking at sensor applications. Requires a final project consisting of a complete IC layout. Students may have the opportunity to fabricate their final project through MOSIS.

EE 507 Feedback Control Systems

Credits: 3  
Prerequisites: EE 440  
Corequisites: None  
Type: LEC  
Introduces feedback control systems. Topics to be covered include feedback control system analysis and design, stability, step response, frequency response, root locus, and root locus for MIMO systems. Emphasis on the design of feedback control systems to achieve desired performance. Requires report and/or design project.

Engineering (SEAS)

EAS 105 Engineering Dean’s Scholars Colloquium

Credits: 0  
Semester:  
Prerequisites: Selection as an Engineering Dean’s Scholar  
Corequisites: None  
Type: TUT  
The content of this course is variable and therefore it is repeatable for credit. The University Grade Repeat Policy does not apply.  
This introductory colloquium offers engineering dean’s scholars opportunities for interaction with the Engineering Dean, prominent UB Engineering faculty, Engineering dean’s staff, and other scholars on a weekly basis. Session will vary depending on the interests of the group but will include visits to local businesses and manufacturing plants, faculty presentations, academic advisement and faculty mentoring, and opportunities for informal networking that promote a sustaining interest in advanced education and research, and encourage participants to become leaders in their field.

EAS 140 Engineering Solutions

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC/LAB  
A first course in engineering. Introduces students to engineering design used to solve technologically based problems in the various fields of engineering, and develops computer skills for problem solving using MAPLE, spreadsheets, network file transfer, remote login, e-mail, UNIX, and algorithmic problem-solving approaches.

EAS 207 Statics

Credits: 3  
Prerequisites: PHY 107, MTH 142  
Corequisites: MTH 241 recommended  
Type: LEC/REC  
Applies mechanics to studying static equilibrium of rigid and elastic bodies. Topics include composition and resolution of forces, moments and couple, equivalent force systems, free-body diagrams, equilibrium of particles and rigid bodies, forces in trusses and beams, friction forces, first and second moments of area, moments and product of inertia, and methods of virtual work and total potential energy.

EAS 208 Dynamics

Credits: 3  
Prerequisites: EAS 207, MTH 241  
Corequisites: MTH 306  
Type: LEC/REC  
Applies mechanics to studying the motion of particles and rigid bodies. Topics include kinematics and kinetics of particles, relative motion, work-energy methods, impulse-momentum methods, kinematics and kinetics of rigid bodies, and simple vibration.

EAS 209 Mechanics of Solids

Credits: 3  
Prerequisites: EAS 207, MTH 241  
Corequisites: MTH 306  
Type: LEC/REC  
Studies the mechanical behavior of solid bodies under various types of loading. Topics include stresses and strain, stress-strain relationships, plane stress and plane strain; shear and bending moments in beams, stresses in beams; deflection of beams, torsion of shafts, buckling of columns, energy methods, and failure criteria.

EAS 230 Higher-Level Language

Credits: 3  
Prerequisites: EAS 140 or permission of instructor  
Corequisites: MTH 142 or equivalent  
Type: LEC/LAB  
A second course in computer technology. Develops detailed knowledge of a higher-level programming language for solution of engineering problems. Extends the knowledge developed initially in EAS 140.

EAS 305 Applied Probability

Credits: 4  
Prerequisites: EAS 140 or MTH 142  
Corequisites: None  
Type: LEC/REC  
Introduces probability and its application to engineering problems. Examines sample space, random variables, expected values, limiting theorems, error analysis, and provides introduction to random processes. Students may not receive credit for this course and CIE 308.

EAS 396 Engineering Career Institute

Credits: 1  
Prerequisites: junior standing in engineering  
Corequisites: None  
Type: LEC  
Provides one academic credit for pre-employment classes with instruction on how to conduct a successful student employment job search. The semester culminates with one week [30 hours] of presentations from industrial managers on essential career-success subjects such as leadership, communication, teamwork, total quality management, and value engineering. This course enables students to obtain engineering credit-worthy employment along with the business success skills needed to be effective on the job. Subsequent to this course, students with jobs will enroll in EAS 496, Engineering Co-op.
EAS 480 Technical Communications for Engineers

Credits: 2  
Prerequisites: upper-division standing in engineering  
Corequisites: None  
Type: LEC/REC  

Presents skills for producing clear, concise engineering communications, both written and oral. Focuses on the most frequently required communications-reports, memos, letters, and proposals. As a semester-long project, students write a proposal and then present it orally. Covers selecting and organizing information; writing efficiently; using easy-to-read language and formats; and adapting communications to peers, employers, clients, and other audiences.

EAS 483 Engineering Procedure Writing

Credits: 3  
Prerequisites: upper-division standing in engineering  
Corequisites: None  
Type: LEC  

With the quality movement of the 1980s and 1990s, customers are requiring proof of a quality system. Companies provide this proof with procedures. In addition, to proof of a quality system, procedures are used for training, standardizing a job, record keeping, and continuously improving a process. Teaches students how to write and manage effective procedures. Focuses on developing the technical and workplace tools an engineer uses to write procedures. As a semester-long project, the course requires students to write a procedure for a real-life company. Covers the following phases of developing a procedure: performing a needs analysis, investigating a process, organizing information, writing efficiently, editing, and validating a procedure. Also teaches students about the latest procedure compliance standards widely used in industry (e.g., ISO9000). Highlights include a field trip and guest speakers from industry.

EAS 490 Engineering Practical Experience

Credits: 1  
Prerequisites: senior standing in engineering  
Corequisites: None  
Type: TUT  

Involves an engineering project carried out during full-time continuous employment with some organization for a minimum of fourteen weeks. Work is under joint supervision of faculty and industrial mentors. Requires a written report. Admission is by exception registration only through the associate dean of the School of Engineering and Applied Sciences. Students must have been accepted by an industrial organization and a faculty mentor prior to registration.

EAS 495 Supervised Undergraduate Teaching

Credits: 3  
Prerequisites: Junior status, 3.0 GPA; A- or better in course in which the student will assist; and permission of instructor  
Corequisites: None  
Type: DIS  

Enrollees participate as undergraduate teaching assistants under the supervision of faculty of the School of Engineering and Applied Sciences.

EAS 496 Engineering Co-op

Credits: 2  
Prerequisites: senior standing in engineering  
Corequisites: None  
Type: TUT  
Up to three work periods of engineering-related employment. Co-op students are employed full-time on paid, credit-worthy technical assignments in industry, with emphasis on practical application of engineering coursework. While each student is registered for two credit hours, full-time status at the University is afforded the student. This protects the student's insurance, loan and possible INS status. The course goal is to provide valuable experience for students while making positive contributions to employers. This win/win combination is designed to enhance participating students' employment opportunities upon commencement.

EAS 498 Undergraduate Research and Creative Activity

Credits: 1  
Prerequisites: Permission of Instructor  
Corequisites: None  
Type: TUT  

Students collaborate with faculty research mentors on an ongoing faculty research project or conduct independent research under the guidance of a faculty member. This experience provides students with an inquiry-based learning opportunity and engages them as active learners in a research setting.

EAS 499 Independent Study

Credits: 1  
Prerequisites: Permission of instructor  
Corequisites: None  
Type: TUT  

Individualized student work under the guidance of a faculty member, intended to pursue topics that are not currently offered through regular coursework at the university.

ENG 101 Writing 1

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  

First semester of the General Education Writing Skills Requirement for students required to take both ENG 101 and ENG 201. Practice in developing essays with variable emphases on purpose, subject, audience, persuasion, in constructing mature sentences and paragraphs, and in revising. Introduces documenting and writing from sources. Twenty-five pages of graded, revised writing, excluding first drafts, exercises, and quizzes. Students may not receive credit for both ENG 101 and ESL 407.

ENG 102 Writing 2

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  

Fulfills the General Education Writing Skills Requirement for students exempted from ENG 101. Reviews essay, paragraph, and sentence development during the first half of the semester. Conceptualizing and conducting original research, culminating in a major research essay using both library and online materials during the second half of the semester. Twenty-five pages of graded, revised writing, excluding first drafts, exercises, and quizzes.

ENG 205 Writing Prose Fiction 1

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  

Basic techniques of fiction writing, emphasizing the short story.

ENG 206 Writing Prose Fiction 2

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  

Basic techniques of fiction writing, emphasizing the short story.

ENG 209 Writing Poetry I

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  

An introduction to the craft of writing poetry. Intensive reading of selected poetry with primary focus on familiarizing students with the basic technical vocabulary and diverse techniques of style and structure. Form, metrics, imagery, and other aspects of poetic study will be discussed in a workshop atmosphere. Students will examine canonical and innovative poetry, offer critical responses to their classmates, and produce and revise original work.

ENG 211 Books of the Environmental Movement

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  

Careful reading and discussion of key writings, past and present, of the American environmental movement. Authors studied include Henry David Thoreau, John Muir, Aldo Leopold, Rachel Carson, Barry Commoner, and others.

ENG 214 Books: The Top Ten

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  

The top ten books recommended in an annual survey of the University at Buffalo faculty as reading without which no undergraduate should have finished his or her education. This course serves as a short, basic introduction to general education.

ENG 221 World Literature I

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  

Selected key texts of world literature in translation.
ENG 222 World Literature II
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Selected key texts of world literature in translation.

ENG 223 Medieval European Women’s Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Explores the medieval literature of women from the third to the sixteenth century. Includes love poetry, letters, dramas, theological tracts, biographies, mystical visions, travelogues, and scientific treatises. Redirects critical attention away from the almost exclusively male canon of medieval texts and toward texts written by women so that some insight may be gained into problems of literary reception and production on the part of women, of the role of women in society, and their informing activities in religious movements.

ENG 224 Medieval European Epic
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Medieval European conceptions of heroism, heroic texts from the European Middle Ages, heroes and their cultural functions in various societies of origin, heroes and the dreams and aspirations of their economic, social, political, and national groups of origin.

ENG 225 Medieval Islamic Epic
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Epic literature of medieval Islamic cultures. Issues of ethics and mortality, the use of force, social values, and cultural difference are considered in the context of heroism within a given culture.

ENG 226 Love in the Western World
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examination of the medieval literary origins of modern conceptions of romantic love. Primarily lyric and epic texts from a dozen cultures, especially Arabic and Persian, Provencal, Italian, and German. Documentation of the development of this phenomenon through the centuries.

ENG 231 British Writers I
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Literature of Britain and Ireland, from the beginnings to the late eighteenth century.

ENG 232 British Writers II
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Literature of Britain and Ireland, from the late eighteenth century to the present.

ENG 241 American Writers I
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Literature of the United States, from its beginnings to the Civil War.

ENG 242 American Writers II
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Literature of the United States, from Reconstruction to the present.

ENG 251 Literary Types: Short Fiction
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces the special qualities of the short story from Boccaccio to such modern masters as Joyce, Kafka, Carver, and O’Connor.

ENG 252 Literary Types: Poetry
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces the study of poetry.

ENG 253 Literary Types: Novel
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces the study of the novel.

ENG 254 Literary Types: Science Fiction
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Surveys some of the major moments in the evolution of science fiction: Clarke, Delany, Le Guin, and Verne, plus such movies as 2001: A Space Odyssey and Blade Runner.

ENG 255 Literary Types: Film
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces the study of film.

ENG 256 Literary Types: Mysteries
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces the study of mysteries.

ENG 257 Literary Types: Drama
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces the study of drama.

ENG 258 Literary Types: Special Topics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
A study in a current topic of interest.

ENG 259 Literary Types: Author
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Concentrated and detailed study of the works, biography, and milieu of a single author, chosen by the instructor.

ENG 260 Literary Types: Women Writers
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces the study of writings by women, chosen by the individual instructor.

ENG 261 Best Sellers
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies the phenomenon of the ‘best seller’ in both past cultures and the contemporary scene.

ENG 262 Literary Approaches: Literature and Psychology
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces feminist theory and its applications to literary texts.

ENG 263 Literary Approaches: Women Writers
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies the phenomenon of the ‘best seller’ in both past cultures and the contemporary scene.

ENG 264 Children’s Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Acquaints students with the vast variety of texts that comprise children’s literature, ranging from seventeenth-century fairy tales to contemporary children’s fiction. Trains students to analyze and write about the relationship between literary texts and the culture within which these texts are produced.

ENG 268 Literary Authors: Irish Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Concentrated study of the work and milieu of a group of Irish writers.

ENG 270 Asian American Authors
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Concentrated study of the work and milieu of a group of Asian American authors.

ENG 271 Literary Approaches: Literature and Psychology
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces some basic texts of modern psychology, with applications to works of literature.

ENG 272 Literary Approaches: Women Writers
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces the study of writings by women, chosen by the individual instructor.

ENG 273 Best Sellers
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies the phenomenon of the ‘best seller’ in both past cultures and the contemporary scene.

ENG 274 Feminist Approaches to Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces feminist theory and its applications to literary texts.

ENG 275 African American Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Surveys African American Literature, including Douglass, DuBois, Hughes, Morrison, Hurston, etc.

ENG 276 Literature and the Law
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies the interactions between the law and great works of fiction by Kafka, Dickens, Shakespeare, and others.
### ENG 277 Introduction to U.S. Latino Literature

- **Credits:** 3
- **Prerequisites:** None
- **Corequisites:** None
- **Type:** LEC
- **Description:** Explores the variety of cultural works produced by U.S. Latino/a writers and artists, from poetry and plays to novels and films.

### ENG 278 Modern African-American Writers

- **Credits:** 3
- **Prerequisites:** None
- **Corequisites:** None
- **Type:** LEC
- **Description:** Surveys the rich spectrum of literature written by African-American writers in the last fifty years.

### ENG 280 American Women Writers

- **Credits:** 3
- **Prerequisites:** None
- **Corequisites:** None
- **Type:** LEC
- **Description:** Explores central themes in the emergence of American women's poetry and fiction.

### ENG 281 Special Topics

- **Credits:** 3
- **Prerequisites:** None
- **Corequisites:** None
- **Type:** LEC
- **Description:** A study in a current topic of interest.

### ENG 282 Shakespeare

- **Credits:** 3
- **Prerequisites:** None
- **Corequisites:** None
- **Type:** LEC
- **Description:** Selected plays from 1560 to 1630, excluding Shakespeare.

### ENG 283 American Writers

- **Credits:** 3
- **Prerequisites:** None
- **Corequisites:** None
- **Type:** LEC
- **Description:** Explores the variety of cultural works produced by U.S. Latino/a writers and artists, from poetry and plays to novels and films.

### ENG 284 Mystery Play Cycles, Morality Plays, and Secular Drama before Shakespeare

- **Credits:** 3
- **Prerequisites:** None
- **Corequisites:** None
- **Type:** LEC
- **Description:** Explores the close parallelism between the analytical and interpretative skills demanded by the law and legal matters and the structure and operation of literary works and documents.

### ENG 285 The Chaucer's Works

- **Credits:** 3
- **Prerequisites:** None
- **Corequisites:** None
- **Type:** LEC
- **Description:** Focuses on Chaucer's works other than the Canterbury Tales, and/or on other Middle English texts.

### ENG 286 Middle English Literature

- **Credits:** 3
- **Prerequisites:** None
- **Corequisites:** None
- **Type:** LEC
- **Description:** Explores the variety of cultural works produced by U.S. Latino/a writers and artists, from poetry and plays to novels and films.

### ENG 287 English Drama

- **Credits:** 3
- **Prerequisites:** None
- **Corequisites:** None
- **Type:** LEC
- **Description:** Mostly nondramatic literature from More to Spenser, Sidney, Marlowe, Donne, and Jonson.

### ENG 288 Renaissance Literature

- **Credits:** 3
- **Prerequisites:** None
- **Corequisites:** None
- **Type:** LEC
- **Description:** Explores central themes in the emergence of American women's poetry and fiction.

### ENG 289 Victorian Age

- **Credits:** 3
- **Prerequisites:** None
- **Corequisites:** None
- **Type:** LEC
- **Description:** British literature and culture from 1832 to 1901; authors include Carlyle, Ruskin, Gaskell, Dickens, Eliot, Barrett Browning, Browning, Rossetti, Tennyson, and others.

### ENG 290 Nineteenth-Century English Novel

- **Credits:** 3
- **Prerequisites:** None
- **Corequisites:** None
- **Type:** LEC
- **Description:** Fiction by selected writers of the period, such as Jane Austen, Charles Dickens, the Brontes, George Eliot, and Thomas Hardy.

### ENG 291 Legal and Literary Interpretation

- **Credits:** 3
- **Prerequisites:** None
- **Corequisites:** None
- **Type:** LEC
- **Description:** A broad introduction to the humanities: literature, film, art, drama, folklore, and more. Specialists from various departments and special visitors discuss their fields of inquiry.

### ENG 292 Critical Theory

- **Credits:** 3
- **Prerequisites:** None
- **Corequisites:** None
- **Type:** LEC
- **Description:** Introduces the craft of literary criticism, including techniques of close reading, two or more sorts of literary theory, and strategies for writing and revising critical papers.

### ENG 293 Shakespeare: Later Plays

- **Credits:** 3
- **Prerequisites:** None
- **Corequisites:** None
- **Type:** LEC
- **Description:** Primarily histories and comedies.
ENG 327 Modern British Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Literature of the twentieth century and its aesthetic and ideological antecedents.

ENG 328 Rethinking Bodies
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Though the human body has often been thought of as the unproblematic (if perhaps inferior) partner of the mind, recent studies in psychoanalysis, gender, and cultural history have made it evident that at different times and places, societies have inscribed different ideas, attitudes and cultural assumptions on the body. This course investigates these problematic aspects of body and mind through both fiction and non-fiction and from within our own culture and via cross-cultural comparisons.

ENG 329 Studies in British Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Selected topics in the literature of Britain and Ireland, chosen by the instructor: pre-Raphaelitism and decadence, the Oxford movement, English travelers and explorers, the Irish literary revival, the criminal in eighteenth-century literature.

ENG 330 Studies in British Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Selected topics in the literature of Britain and Ireland, chosen by the instructor: pre-Raphaelitism and decadence, the Oxford movement, English travelers and explorers, the Irish literary revival, the criminal in eighteenth-century literature.

ENG 331 Modern British Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
An examination of the modern British novel and its aesthetic and ideological antecedents.

ENG 332 Early American Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Writing from 1630 to 1750, with special attention to the Puritan tradition.

ENG 333 American Literature, 1828-1865
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Writings of Emerson, Thoreau, Poe, Hawthorne, Melville, Sedgwick, Douglass, Jacobs, Stowe, Dickinson, and Whitman.

ENG 334 American Literature, 1865-1914
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Realism and naturalism; Twain, James, DuBois, Wharton, Chopin, Stein, London, and Dreiser.

ENG 335 Nineteenth-Century American Novel
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Selected novels by Cooper, Melville, Hawthorne, Alcott, Douglass, Stowe, Jacobs, Twain, and James.

ENG 336 Modern American Novel
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Selected novels by James, Wharton, and Stein; through Dreiser, Gilman, Cather, Faulkner, Larsen, Wright, Hurston, Dos Passos, Ellison, Ford, Morrison, and King.

ENG 337 Modern American Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
First semester: 1914-1945.

ENG 338 Modern American Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Second semester: 1945-present.

ENG 339 American Poetry
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Selected American poets, primarily from the nineteenth and twentieth centuries; emphasizing American cultural contexts, national identity, vernacular language, and formal innovations.

ENG 340 American Drama
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Special attention to the twentieth century.

ENG 341 Multicultural Autobiography
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines autobiographies as complex examples of culture, of lived experience within culture, and as textual representations of cultural reciprocity and transvaluation.

ENG 342 Studies in American Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
A representative sampling of modern American fiction that focuses on issues and problems of family history.

ENG 343 Native American Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies the oral and written literature of Native Americans.

ENG 344 Visions of America
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Texts in which American writers attempt to create, define, or revise our sense of a national culture are read in detail and within their larger cultural contexts.

ENG 345 Studies in English and American Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
A careful reading and analysis of the major modern British and American poets, in relation to movements of modern thought and action.

ENG 346 Studies in English and American Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines autobiographies as complex examples of culture, of lived experience within culture, and as textual representations of cultural reciprocity and transvaluation.

ENG 347 American Drama
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
A representative sampling of modern American fiction that focuses on issues and problems of family history.

ENG 348 Family History
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
A representative sampling of modern American fiction that focuses on issues and problems of family history.
ENG 355 European Drama
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Plays illustrating major developments in Continental dramatic literature.

ENG 357 Contemporary Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Texts in English and other languages illustrating significant currents in the literature of our day.

ENG 358 Experimental Fiction
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Novels and short stories of the modernist and postmodernist movements, with special attention to experimental techniques and the rationales that underlie them.

ENG 359 The Bible as Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Extensive reading in the Bible, with some consideration of modern biblical scholarship; explores the more important uses of religious and biblical ideas in various periods of English and American literature.

ENG 360 The Bible as Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Extensive reading in the Bible, with some consideration of modern biblical scholarship; explores the more important uses of religious and biblical ideas in various periods of English and American literature.

ENG 361 Folklore
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Content, structure, and function of traditional folklore genres (tale, myth, ballad, riddle, proverb), theoretical and practical survey of oral forms and oral history using major folklore collections, both printed and recorded.

ENG 362 Folklore
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Content, structure, and function of traditional folklore genres (tale, myth, ballad, riddle, proverb), theoretical and practical survey of oral forms and oral history using major folklore collections, both printed and recorded.

ENG 363 Children’s Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Literary works primarily written for or read by children.

ENG 364 Children’s Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies various film genres (melodrama, horror, film noir, comedy, science fiction, westerns) and sub-genres (maternal melodrama, splatter films, police procedurals, cyberpunk) as artistic texts and as Hollywood marketing strategies.

ENG 365 African American Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Historical review of African-American writers from the eighteenth century to the present.

ENG 366 African American Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Historical review of African-American writers from the eighteenth century to the present.

ENG 367 Literature and Psychology
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Methods and basic texts of modern psychology (psychoanalysis, theory of archetypes, Lacanian theory), and their application to works of literature.

ENG 368 Literature and Psychology
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Methods and basic texts of modern psychology (psychoanalysis, theory of archetypes, Lacanian theory), and their application to works of literature.

ENG 369 Literature and the History of Ideas
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Major literary and philosophical texts of Western culture in their historical contexts, read as imaginative strategies or modes of consciousness responding to perennial human problems.

ENG 370 Multimedia Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Addresses the meeting of literature and technology by examining multimedia fiction, poetry, and criticism available on CD-ROM and the World Wide Web.

ENG 372 Special Topics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
A study in a current topic of interest.

ENG 373 Biography and Autobiography
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Reading and analyzing major biographies and autobiographies from antiquity to the present.

ENG 374 Best Sellers
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Selected titles in fiction and nonfiction from current best-seller lists: their artistic, cultural, ideological, and social significance; relationships among commercial, pop, and high art standards.

ENG 375 Heaven, Hell, and Judgment: Myth and Image
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines the iconography and literature of the sacred tradition in art.

ENG 376 Approaches to Literature: Popular Culture
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies the effects of mass culture on the popular arts, with relevant theory.

ENG 377 Modern Poetry, Painting, and Music
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Considers mythology both as a kind of knowing and as 'sacred stories' in religion, literature, anthropology, psychoanalysis, and science.

ENG 378 Books of the Ancient Mayas
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Close study of Mayan texts, alphabetic and hieroglyphic, in English translation.

ENG 379 Film Genres
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies various film genres (melodrama, horror, film noir, comedy, science fiction, westerns) and sub-genres (maternal melodrama, splatter films, police procedurals, cyberpunk) as artistic texts and as Hollywood marketing strategies.

ENG 380 Postcolonial Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Focuses on literary works produced by people living in countries formerly colonized by other nations or by people living in diasporic communities whose connections can be traced back to locations such as Africa, Australia, South Asia, the Caribbean, China, India, Ireland, New Zealand, or Pakistan.

ENG 381 Mythology
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Considers mythology both as a kind of knowing and as ‘sacred stories’ in religion, literature, anthropology, psychoanalysis, and science.

ENG 382 Books of the Ancient Mayas
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Close study of Mayan texts, alphabetic and hieroglyphic, in English translation.

ENG 383 Literature and Society
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Problems in the relations of literature to history, society, and culture, as chosen by the instructor.

ENG 384 Short Fiction
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
An advanced course in short fiction from the middle ages to the present, selected by the individual instructor.

ENG 385 Literature and Gender
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies the way literature contributes to and challenges the gender divisions in culture and society.
ENG 389 Creative Writing: Poetry
Credits: 3
Prerequisites: permission of instructor
Corequisites: None
Type: SEM
Workshop in techniques of writing poetry, demanding regular verse productions by the student.

ENG 390 Creative Writing: Poetry
Credits: 3
Prerequisites: permission of instructor
Corequisites: None
Type: SEM
Workshop in techniques of writing poetry, demanding regular verse productions by the student.

ENG 391 Creative Writing: Fiction
Credits: 3
Prerequisites: permission of instructor
Corequisites: None
Type: SEM
Workshop in forms of the novel and short story: techniques of narration, exposition, structural experimentation, thematic invention.

ENG 392 Creative Writing: Fiction
Credits: 3
Prerequisites: permission of instructor
Corequisites: None
Type: SEM
Workshop in forms of the novel and short story: techniques of narration, exposition, structural experimentation, thematic invention.

ENG 393 Ethics in Journalism
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines the ethical considerations that confront journalists in print and electronic media.

ENG 394 Journalism: Words and Pictures
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces documentary and journalistic issues in the media age.

ENG 395 Writing Workshop
Credits: 3
Prerequisites: None
Corequisites: None
Type: TUT
Intensive practice in writing; specific approach chosen by instructor.

ENG 396 Writing Workshop
Credits: 3
Prerequisites: None
Corequisites: None
Type: TUT
Intensive practice in writing; specific approach chosen by instructor.

ENG 397 Literary Journalism
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Workshop in forms of writing about books and intellectual issues, not specifically limited to the academic or scholarly community: book reviews, magazine editorials, nontechnical nonfiction. LEC

ENG 398 Journalism
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Specific problems of journalistic writing chosen by instructor. LEC

ENG 399 Journalism
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Specific problems of journalistic writing chosen by instructor. LEC

ENG 400 Honors Seminar
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
See description of departmental honors program.

ENG 401 Honors Seminar
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
See description of departmental honors program.

ENG 407 Authors: James Joyce
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Concentrated and detailed study of the works, biography, and milieu of James Joyce.

ENG 409 Mark Twain
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Concentrated and detailed study of the works, biography, and milieu of Mark Twain.

ENG 410 Authors
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Concentrated and detailed study of the works, biography, and milieu of a single author, chosen by the instructor.

ENG 411 William Faulkner
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Concentrated and detailed study of the works, biography, and milieu of William Faulkner.

ENG 412 Authors
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Concentrated and detailed study of the works, biography, and milieu of a single author, chosen by the instructor.

ENG 413 Film Directors
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines the films of individual directors, both Hollywood and European.

ENG 414 Authors
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Concentrated and detailed study of the works, biography, and milieu of a single author, chosen by the instructor.

ENG 417 Epic Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Two or more of the major epics of English or world literature (Homer, Virgil, Beowulf, Tasso, Milton) viewed in the context of epic theory, from Aristotle to the present; works of prose fiction that have arguably epic dimensions (Tolstoy's War and Peace, Mann's Buddenbrooks), chosen by instructor.

ENG 418 Epic Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Two or more of the major epics of English or world literature (Homer, Virgil, Beowulf, Tasso, Milton) viewed in the context of epic theory, from Aristotle to the present; works of prose fiction that have arguably epic dimensions (Tolstoy's War and Peace, Mann's Buddenbrooks), chosen by instructor.

ENG 420 Film Theory
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
What is cinema? Is it about movement or time? What is the role of off-screen space? Why is it taboo for a character to look at the camera? Do close-ups bring us closer to objects on screen, increase their scale, or open up a new dimension of space? We pursue these and other questions in studies of the ontological nature of film.

ENG 421 Comedy
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Reading and analyzing major figures of comedy from Aristophanes to the present; theories of comedy tested against specific literary works.

ENG 423 Satire
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Reading and analyzing major satirists, from classical literature to the present; theories of satire tested against specific literary works.

ENG 424 Satire
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Reading and analyzing major satirists, from classical literature to the present; theories of satire tested against specific literary works.

ENG 425 Lyric Poetry
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Focuses on the lyric poetry tradition from the medieval period to the postmodern, with attention to formal traditions and innovations.

ENG 426 Studies in Genre
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM/REC
Similar to ENG 251-ENG 260 but utilizing texts, methodologies, and theories of greater sophistication and scope; requires mastery of advanced analytical skills.
ENG 427 Studies in the Novel
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Similar to ENG 253 but utilizing texts, methodologies, and theories of greater sophistication and scope; requires mastery of advanced analytical skills.

ENG 428 Studies in Genre: Drama
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Similar to ENG 259 but utilizing texts, methodologies, and theories of greater sophistication and scope; requires mastery of advanced analytical skills.

ENG 429 Studies in Genre
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Similar to ENG 251-ENG 260 but utilizing texts, methodologies, and theories of greater sophistication and scope; requires mastery of advanced analytical skills.

ENG 430 Topics in African American History
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Selected readings in African American literature chosen by the instructor.

ENG 431 Critical Theory
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Reading and analyzing selected theories of criticism and of literary texts that illustrate them.

ENG 432 Critical Theory
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Reading and analyzing selected theories of criticism and of literary texts that illustrate them.

ENG 433 Advanced Creative Writing: Poetry
Credits: 3
Prerequisites: permission of instructor
Corequisites: None
Type: SEM
For advanced students.

ENG 434 Advanced Creative Writing: Poetry
Credits: 3
Prerequisites: permission of instructor
Corequisites: None
Type: SEM
For advanced students.

ENG 435 Advanced Creative Writing: Fiction
Credits: 3
Prerequisites: permission of instructor
Corequisites: None
Type: SEM
For advanced students.

ENG 436 Advanced Creative Writing: Fiction
Credits: 3
Prerequisites: permission of instructor
Corequisites: None
Type: SEM
For advanced students.

ENG 437 Advanced Writing Workshop
Credits: 3
Prerequisites: permission of instructor
Corequisites: None
Type: SEM
For advanced students working in forms other than poetry or fiction.

ENG 438 Advanced Writing Workshop
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Work of important documentary artists in various genres (literary, cinematic, photographic), field research and production of a work of social documentation (film, videotape, series of photographs, transcribed interviews, articles).

ENG 439 Social Documentary
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Work of important documentary artists in various genres (literary, cinematic, photographic), field research and production of a work of social documentation (film, videotape, series of photographs, transcribed interviews, articles).

ENG 440 Social Documentary
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Work of important documentary artists in various genres (literary, cinematic, photographic), field research and production of a work of social documentation (film, videotape, series of photographs, transcribed interviews, articles).

ENG 441 Cinema
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC/LAB
Viewing and analyzing selected films.

ENG 442 Cinema
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC/LAB
Viewing and analyzing selected films.

ENG 443 Literature in Translation
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Major texts in English translation, viewed in light of cultural and aesthetic currents, chosen by the instructor.

ENG 444 Literature in Translation
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Major texts in English translation, viewed in light of cultural and aesthetic cross-currents, chosen by the instructor.

ENG 446 Literature in Translation
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Major texts in English translation, viewed in light of cultural and aesthetic cross-currents, chosen by the instructor.

ENG 447 Mythology of the Americas
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Close reading of selected myths from the Americas as expressed by storytellers, speechmakers, and singers, and in Native American writing systems.

ENG 448 Mythology of the Americas
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Close reading of selected myths from the Americas as expressed by storytellers, speechmakers, and singers, and in Native American writing systems.

ENG 449 Problems in Literature: Critical Theory
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Reading and analysis of selected theories of criticism and of literary texts that illustrate them.

ENG 450 Problems in Literature: Critical Theory
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Reading and analysis of selected themes chosen by the instructor.

ENG 451 Playwriting Workshop
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
A workshop class that gives attention to dialogue, characterization, thematic development, and the dramatic structure of plays, with classes centering on students' work in progress, and assigned plays by contemporary authors.

ENG 452 Playwriting Workshop
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
A workshop class that gives attention to dialogue, characterization, thematic development, and the dramatic structure of plays, with classes centering on students' work in progress, and assigned plays by contemporary authors.

ENG 453 Advanced Creative Writing: Non-Fiction
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
A study in a current topic of interest.

ENG 454 Problems in Literature: Critical Theory
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
A study in a current topic of interest.

ENG 455 Problems in Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
A study in a current topic of interest.

ENG 456 Writing Internship
Credits: 1
Prerequisites: permission of instructor
Corequisites: None
Type: TUT
Guided reading and directed research under individual faculty advisors. See special instructions.

ENG 457 Special Topics
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
A study in a current topic of interest.

ENG 458 Special Topics
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
A study in a current topic of interest.

ENG 459 Special Topics
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
A study in a current topic of interest.

ENG 460 Special Topics
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
A study in a current topic of interest.

ENG 461 Playwriting Workshop
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
A workshop class that gives attention to dialogue, characterization, thematic development, and the dramatic structure of plays, with classes centering on students' work in progress, and assigned plays by contemporary authors.

ENG 462 Playwriting Workshop
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
A workshop class that gives attention to dialogue, characterization, thematic development, and the dramatic structure of plays, with classes centering on students' work in progress, and assigned plays by contemporary authors.

ENG 463 Special Topics
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
A study in a current topic of interest.
English as a Second Language

ESL 407 Written English I
Credits: 3  
Prerequisites: None  
Type: LEC  
Introduction to academic writing. Covers various methods of organizing paragraphs and essays, effective use of grammatical structures, editing and revising, and strategies for efficient reading. For those undergraduates whose first or dominant language is other than English, successful completion of ESL 407 and ESL 408 meets the university's writing requirement. Students may not receive credit for both ESL 407 and ENG 101.

ESL 408 Written English II
Credits: 3  
Prerequisites: ESL 407 or ENG 101  
Type: LEC  
Continues the development of academic writing. Covers rhetorical patterns in formal writing, critical reading, paraphrasing, citation, and the completion of a library research paper. For those undergraduates whose first of dominant language is other than English, successful completion of ESL 407 and ESL 408 meets the university's writing requirement. Students may not receive credit for both ESL 408 and either ENG 102 or ENG 201.

ESL 411 Spoken English
Credits: 3  
Prerequisites: None  
Type: LEC  
Speaking skills for the university context. Topics include preparation and delivery of individual and group presentations, understanding and practice of American idiomatic speech, and improvement of pronunciation. Reviews of students’ videotaped presentations provide feedback.

ESL 412 Spoken English
Credits: 3  
Prerequisites: None  
Type: LEC  
Speaking skills for the university context. Topics include preparation and delivery of individual and group presentations, understanding and practice of American idiomatic speech, and improvement of pronunciation. Reviews of students’ videotaped presentations provide feedback.

Environmental Design/Planning

PD 120 Introduction to Urban Studies
Credits: 3  
Prerequisites: None  
Type: LEC  
An introductory course and approved social science general education course. Examines concepts and content related to cities, suburbs, and metropolitan regions within and outside the U.S. From multidisciplinary perspectives, covers media images of cities and suburbs, patterns and trends in urban settlements over time and place, urban observation, demographics, culture, and design, and contemporary urban issues, including race relations, environmental issues, and crime. Involves lectures, discussions, and fieldwork. Open to non-majors.

PD 212 Urban and Environmental Planning
Credits: 3  
Prerequisites: None  
Type: LEC  
An introductory course and approved social science general education course. Examines concepts and content in urban and environmental planning. Covers the who, what, why, and how of planning as a profession and process. Topics include the legal basis for urban and environmental planning, planning tools and techniques, the development process, community design issues, and major planning foci, such as sprawl and growth management, neighborhood development, transportation systems, historic preservation, and environmental affairs. Involves lectures, discussions, and fieldwork. Open to non-majors.

PD 230 Urban Development Law and Policy
Credits: 3  
Prerequisites: None  
Type: LEC  
Cross-listed with JLS 145 Urban Development Law and Policy. May be offered on an intermittent basis. Open to non-majors.

PD 279 Buffalo Niagara By Design
Credits: 3  
Prerequisites: None  
Type: LEC  
Cross-listed with ARC 280 Buffalo Niagara by Design. May be offered on an intermittent basis. Open to non-majors.

PD 301 Perspectives on Land Use and Development
Credits: 3  
Prerequisites: PD 212 or permission of advisement  
Type: LEC  
Covers concepts and practices of urban land use and development in U.S. Topics include zoning, growth management, site design, environmental issues and land use evolution. Involves lectures, discussions, and fieldwork.

PD 302 Technology and Public Policy
Credits: 3  
Prerequisites: None  
Type: LEC  
Investigates the various approaches governments use to regulate or control communication and information technologies. Specific issues addressed include equality of access in urban and rural communities and related public policies. May be offered on an intermittent basis.

PD 303 Methods of Communication
Credits: 3  
Prerequisites: None  
Type: SEM  
Explores current issues found in urban and built environments, examines associated problems and processes, and reviews possible community solutions. Topics vary annually. In the past, the course has covered U.S.-Canadian border issues. May be offered on an intermittent basis.

PD 312 Design of Cities
Credits: 3  
Prerequisites: None  
Type: LEC  
Examines ways in which education influences, and is influenced by, urban communities. Considers how educational institutions can respond to conditions and issues that exist in urban environments. Reviews challenges confronting communities and urban education e.g., urban problems, community relations, environmental design, and government policies related to education and urban development. Explores and identifies opportunities for collaboration and partnerships between urban education institutions and community planning. Involves lectures, discussions, and fieldwork.

PD 306 Communities and Urban Education
Credits: 3  
Prerequisites: PD 120 or permission of instructor  
Type: LEC  
Examines ways in which education influences, and is influenced by, urban communities. Considers how educational institutions can respond to conditions and issues that exist in urban environments. Reviews challenges confronting communities and urban education e.g., urban problems, community relations, environmental design, and government policies related to education and urban development. Explores and identifies opportunities for collaboration and partnerships between urban education institutions and community planning. Involves lectures, discussions, and fieldwork.

PD 308 Problem Solving in Urban Environments
Credits: 3  
Prerequisites: None  
Type: LEC  
Examines ways in which education influences, and is influenced by, urban communities. Considers how educational institutions can respond to conditions and issues that exist in urban environments. Reviews challenges confronting communities and urban education e.g., urban problems, community relations, environmental design, and government policies related to education and urban development. Explores and identifies opportunities for collaboration and partnerships between urban education institutions and community planning. Involves lectures, discussions, and fieldwork.

PD 313 Local Government Policy and Politics
Credits: 3  
Prerequisites: None  
Type: LEC  
Examines ways in which education influences, and is influenced by, urban communities. Considers how educational institutions can respond to conditions and issues that exist in urban environments. Reviews challenges confronting communities and urban education e.g., urban problems, community relations, environmental design, and government policies related to education and urban development. Explores and identifies opportunities for collaboration and partnerships between urban education institutions and community planning. Involves lectures, discussions, and fieldwork.

PD 328 Historic Preservation
Credits: 3  
Prerequisites: PD 212  
Type: LEC  
Provides insights to the process and outcomes of local government decision-making. Topics include the types and powers of various local government entities, including: the influence of politics, how governments determine agendas, and implement projects/policies.

PD 309 Environmental Education and Communication
Credits: 3  
Prerequisites: None  
Type: LEC  
Examines ways in which education influences, and is influenced by, urban communities. Considers how educational institutions can respond to conditions and issues that exist in urban environments. Reviews challenges confronting communities and urban education e.g., urban problems, community relations, environmental design, and government policies related to education and urban development. Explores and identifies opportunities for collaboration and partnerships between urban education institutions and community planning. Involves lectures, discussions, and fieldwork.

PD 310 Perspectives on Land Use and Development
Credits: 3  
Prerequisites: PD 212 or permission of advisement  
Type: LEC  
Covers concepts and practices of urban land use and development in U.S. Topics include zoning, growth management, site design, environmental issues and land use evolution. Involves lectures, discussions, and fieldwork.

PD 311 Technology and Public Policy
Credits: 3  
Prerequisites: None  
Type: LEC  
Investigates the various approaches governments use to regulate or control communication and information technologies. Specific issues addressed include equality of access in urban and rural communities and related public policies. May be offered on an intermittent basis.

PD 312 Design of Cities
Credits: 3  
Prerequisites: None  
Type: LEC  
Examines ways in which education influences, and is influenced by, urban communities. Considers how educational institutions can respond to conditions and issues that exist in urban environments. Reviews challenges confronting communities and urban education e.g., urban problems, community relations, environmental design, and government policies related to education and urban development. Explores and identifies opportunities for collaboration and partnerships between urban education institutions and community planning. Involves lectures, discussions, and fieldwork.

PD 313 Local Government Policy and Politics
Credits: 3  
Prerequisites: None  
Type: LEC  
Examines ways in which education influences, and is influenced by, urban communities. Considers how educational institutions can respond to conditions and issues that exist in urban environments. Reviews challenges confronting communities and urban education e.g., urban problems, community relations, environmental design, and government policies related to education and urban development. Explores and identifies opportunities for collaboration and partnerships between urban education institutions and community planning. Involves lectures, discussions, and fieldwork.

PD 328 Historic Preservation
Credits: 3  
Prerequisites: PD 212  
Type: LEC  
Provides insights to the process and outcomes of local government decision-making. Topics include the types and powers of various local government entities, including: the influence of politics, how governments determine agendas, and implement projects/policies.

PD 309 Environmental Education and Communication
Credits: 3  
Prerequisites: None  
Type: LEC  
Examines ways in which education influences, and is influenced by, urban communities. Considers how educational institutions can respond to conditions and issues that exist in urban environments. Reviews challenges confronting communities and urban education e.g., urban problems, community relations, environmental design, and government policies related to education and urban development. Explores and identifies opportunities for collaboration and partnerships between urban education institutions and community planning. Involves lectures, discussions, and fieldwork.
PD 350 Environmental Design Workshop I: Information Analysis
Credits: 6  
Prerequisites: junior standing and environmental design major  
Corequisites: None  
Type: SEM  
Provides students with research methodologies in gathering, analyzing, interpreting, and communicating qualitative and quantitative information about the contemporary urban environment and its possible futures. Data sources include U.S. Census materials, state and regional agency databases, community master plans, historical archives, and online and hardcopy reports and surveys.

PD 355 Urban and Environmental Information
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Examines, uses, and assesses urban information systems, such as signage, environmental data, and neighborhood demographics. Involves lectures, discussions, and fieldwork. May be offered on an intermittent basis.

PD 356 Computing for Environmental Analysis
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LAB/SEM  
Covers basics of geographic information systems (GIS) and other computing tools for understanding, mapping, and analyzing natural and built environments. Includes weekly computer lab.

PD 360 Environmental Design Workshop II: Graphic Communications
Credits: 6  
Prerequisites: junior standing and environmental design major  
Corequisites: None  
Type: SEM  
Examines modes of visual literacy for comprehending the built environment. Introduces rudimentary graphic representation skills for visually communicating urban planning and design concepts through readings and hands-on exercises. Class activities include drawing, drafting, design fundamentals, generating computer graphics, and urban observation.

PD 362 Property Management
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Examines management of residential, commercial, and industrial properties within various community settings. Reviews property site selection procedures and community land use planning. Investigates activities within property management including market surveys, planning, design, aesthetics, renovations, and forecasting demand within urban and regional environments. May be offered on an intermittent basis.

PD 379 The City Through Film
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Through weekly film screenings, discussions, readings, and critiques, explores themes of urban imagery, inner city, city-suburb relations, community planning and politics, and urban futures in cinema. May be offered on an intermittent basis.

PD 395 Special Topics
Credits: 6  
Prerequisites: junior standing and environmental design major/minor  
Corequisites: None  
Type: LEC  
Topics vary annually. In the past this course addressed research methods, data analysis, information dissemination, geographic computing technologies, and communication techniques on urban and environmental issues. May be offered on an intermittent basis.

PD 402 Real Estate Development Business
Credits: 3  
Prerequisites: PD 212 or permission of advisement  
Corequisites: None  
Type: LEC  
Introduces students to all aspects of real estate development, including planning, site acquisition, project feasibility, finance, and development. Uses case studies, small group activities, fieldwork, readings, and discussions.

PD 405 Special Topics
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Topics vary annually. In the past this course addressed the development and management of real estate property. May be offered on an intermittent basis.

PD 406 Community Development Processes
Credits: 3  
Prerequisites: PD 350 and senior standing or permission of advisement  
Corequisites: None  
Type: SEM  
Studies theories, concepts, and practices of neighborhood planning and design in community development, emphasizing local urban neighborhoods. Involves lectures, discussions, and fieldwork. May be offered on an intermittent basis.

PD 407 Site Planning and Design
Credits: 3  
Prerequisites: PD 350 or permission of advisement  
Corequisites: None  
Type: SEM  
Examines environmental impacts and capacity of physical infrastructure systems in relation to the site requirements of various urban and community settings. Presents and analyzes planning and design ideas through investigation and review of site conditions. May be offered on an intermittent basis.

PD 408 Special Topics
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Topics vary annually. In the past this course addressed the planning and design of suburban communities. May be offered on an intermittent basis.

PD 409 Technology and Urban Social Change
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Examines technology in contemporary society, including fiscal impact of development, school finance, and tax increment financing models. May be offered on an intermittent basis.

PD 412 Special Topics
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Examines strategies and practices of urban revitalization with a focus on downtown and commercial revitalization in metropolitan central cities. Place-based and people-based strategies for urban revitalization will be investigated and explored. Best Practices in urban planning and design, including current research and scholarship, will be analyzed. May be offered on an intermittent basis.

PD 413 Special Topics
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Topics vary annually. In the past this course addressed legal issues in planning, design, and development. May be offered on an intermittent basis.

PD 422 Economic Development Planning and Industrial Change
Credits: 3  
Prerequisites: PD 350 and senior standing or permission of advisement  
Corequisites: None  
Type: SEM  
Covers theory, concepts, and practices in contemporary economic development planning. Considers alternative approaches to job growth, including industrial development, workforce training, and quality of life strategies. May be offered on an intermittent basis.

PD 439 Local Government Finance and Budgeting
Credits: 3  
Prerequisites: PD 313 and senior standing or permission of advisement  
Corequisites: None  
Type: LEC  
Introduces students to the theory, practice, and real world applications of local government finances. Concentrates on public budgeting issues and revenue analysis. Examines concerns in community planning, including fiscal impact of development, school finance, and tax increment financing models. May be offered on an intermittent basis.

PD 442 Central City Revitalization
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Examines theory and practice of urban revitalization with a focus on downtown and commercial revitalization in metropolitan central cities. Place-based and people-based strategies for urban revitalization will be investigated and explored. Best Practices in urban planning and design, including current research and scholarship, will be analyzed. May be offered on an intermittent basis.

PD 443 Negotiation and Conflict Resolution
Credits: 3  
Prerequisites: PD 350 and senior standing or permission of advisement  
Corequisites: None  
Type: SEM  
Introduces and practices techniques in negotiations and bargaining, particularly as applied to community planning and environmental conflict. May be offered on an intermittent basis.
PD 450 Environmental Design Workshop III: Comprehensive Projects and Processes  
Credits: 6  
Prerequisites: PD 350, PD 360, and senior standing in environmental design  
Corequisites: None  
Type: LAB  
Engages students in community planning and environmental design fieldwork in Western New York. Under the instructor's supervision, students work with clients and community groups to understand complex community and environmental issues, research best practices, and develop final plans, comprehensive designs, and presentations.

PD 459 Tourism and Recreation Planning  
Credits: 3  
Prerequisites: PD 350 or permission of advisement  
Corequisites: None  
Type: SEM  
Examines a variety of specific tourism and recreation ventures and explores how they can be used to enhance development. Considered from several perspectives, including the role of tourism in economic development and the community level relationship between hosts and guests. May be offered on an intermittent basis.

PD 463 Cities and Globalization  
Credits: 3  
Prerequisites: PD 350 and senior standing or permission of advisement  
Corequisites: None  
Type: SEM  
Considers "world cities" and how global trends and forces shape the community design, politics, social life, environment, and economies of urban places. Involves lectures, discussions, and fieldwork. May be offered on an intermittent basis.

PD 467 Legal Issues in Planning and Development  
Credits: 3  
Prerequisites: PD 212 and Junior or Senior class standing  
Corequisites: None  
Type: LEC  
Explores historical and legal foundations of planning and development. Provides a legal perspective on land use, zoning policies, environmental regulations, housing, and other areas of interest. Reviews political, legal, and administrative institutions related to the planning and development process. May be offered on an intermittent basis.

PD 469 GIS Applications  
Credits: 3  
Prerequisites: PD 356 and senior standing or permission of advisement  
Corequisites: None  
Type: SEM  
Covers theory, techniques, and applications in geographic information systems, particularly as applied to planning problems and issues. Includes weekly computer lab. May be offered on an intermittent basis.

PD 472 Designing Livable Communities  
Credits: 3  
Prerequisites: PD 350 or permission of the instructor  
Corequisites: None  
Type: SEM  
Introduces concepts and techniques in community design, land use, site planning, property development, and redevelopment. Involves lectures, discussions, and fieldwork. May be offered on an intermittent basis.

PD 479 Global Issues Futures  
Credits: 3  
Prerequisites: PD 350 and senior standing or permission of the instructor  
Corequisites: None  
Type: SEM  
Covers concepts and methods in futures planning, including scenario development, planning projections, and global trend analysis. May be offered on an intermittent basis.

PD 480 Environmental Design Study Abroad  
Credits: 3  
Prerequisites: Environmental design major or permission  
Corequisites: None  
Type: LAB/LEC  
Locations vary annually. In the past, undergraduate students have participated in environmental design study abroad programs taught in Australia, Cuba, Costa Rica, the Dutch Antilles, and other international locations as organized by the Department of Urban and Regional Planning. Other in-house study abroad programs will be offered on an ad-hoc basis by the Department of Urban and Regional Planning, based upon faculty and student interest. May be offered on an intermittent basis.

PD 488 Special Topics  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Topics vary annually. In the past this course addressed hidden systems of cities and urban environments- utilities, water, sewer, telecommunications, and transport. May be offered on an intermittent basis.

PD 489 Special Topics  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Topics vary annually. In the past this course addressed urban hazards and disasters and community revitalization planning. May be offered on an intermittent basis.

PD 491 Special Topics  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Topics vary annually. In the past this course addressed community planning, tourism planning, and environmental design. May be offered on an intermittent basis.

PD 492 Colloquium I  
Credits: 1  
Prerequisites: Majors-only or permission of advisement  
Corequisites: None  
Type: TUT  
Topics vary annually. In the past, an examination of issues pertaining to environmental design, community planning, and regional development. Included historical, theoretical, formal, technical, and ethical concerns in planning, design, and development. Content defined by instructor; with group discussions focused on assigned readings and field trips. May be offered on an intermittent basis.

PD 493 Colloquium II  
Credits: 1  
Prerequisites: Majors-only or permission of advisement  
Corequisites: None  
Type: TUT  
Topics vary annually. In the past, an examination of issues pertaining to environmental design, community planning, and regional development. Included historical, theoretical, formal, technical, and ethical concerns in planning, design, and development. Content defined by instructor; with group discussions focused on assigned readings and field trips. May be offered on an intermittent basis.

PD 494 Visions of the City  
Credits: 3  
Prerequisites: PD 350, PD 360, and senior standing in environmental design with a 2.50 GPA  
Corequisites: PD 498  
Type: SEM  
Student-led, faculty-guided reading course covers classic and contemporary books on the natural, built, and urban environments.

PD 496 Environmental Design Internship  
Credits: 1  
Prerequisites: None  
Corequisites: None  
Type: TUT  
Offers opportunity to work in urban or regional agencies in areas such as housing development, local government, strategic planning, transportaton, community development, environmental affairs, land use, and urban design.

PD 498 Research Projects in Environmental Design  
Credits: 3  
Prerequisites: PD 350, PD 360, and senior standing in environmental design  
Type: SEM  
Engages students in environmental design methodologies and individual research on a topic of contemporary interest. Topics vary annually. In the past this course addressed community design, urban/suburban relations, urban subcultures, urban hazards and disasters, environmental planning, and urban development.

PD 499 Independent Study  
Credits: 1  
Prerequisites: None  
Corequisites: None  
Type: TUT  
Designed to add depth and breadth to a student's degree program. Students electing this course must be accepted for work on a specific topic by a member of the faculty, and must have the approval of the department's chair.
Exercise Science

ES 102 Fundamentals of Wellness
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Provides information, theories, and practices, which support individual wellness and health promotion on college campuses. Students are participants in an interactive learning environment that addresses key campus health and wellness issues, including: building healthy relationships and healthy communities, alcohol and other drug use, sexual health, nutrition and physical activity, violence and sexual assault prevention, and stress management.

ES 200 Science of Human Movement
Credits: 3
Prerequisites: ES Major
Corequisites: None
Type: LEC
Introduces the biological and physical bases of exercise responses and adaptations to chronic physical activity in humans. Emphasizes the integrated exercise responses of the body systems. Examination of appropriate exercise principles and concepts is accompanied by critical examination of misconceptions, fads, and myths that pervade exercise and fitness activities. Not recommended for students in their freshman year.

ES 300 Theory of Athletic Injury I
Credits: 3
Prerequisites: ANA 407
Corequisites: None
Type: LEC
Studies the theory and principles of athletic injury as associated with human performance. Emphasizes the application of scientific principles of human growth and development, physical conditioning, injury prevention, and emergency care, and the understanding of rehabilitative procedures.

ES 310 Exercise Assessment, Prescription, and Programming I
Credits: 2
Prerequisites: ES 200, ANA 407
Corequisites: ES 380
Type: LEC/LAB/REC
Two-semester course that examines theoretical and practical aspects of exercise testing, body composition, fitness evaluation, client interviews and education, exercise prescription, emergency procedures, program administration, and management.

ES 330 Lifespan Physiology
Credits: 3
Prerequisites: ES 200, ES 342, ES 380
Corequisites: None
Type: LEC
Focuses on motor development, neural control of movement, learning, and memory throughout the life span, with special reference to pediatrics and geriatrics.

ES 340 Physical Activity for Special Cases
Credits: 3
Prerequisites: ES 310, ES 380, ANA 407
Corequisites: None
Type: LEC
Analyzes exercise responses, testing and prescription, and adaptation to chronic physical activity in special populations, including cardiac and pulmonary rehabilitation, work hardening, chronic obstructive pulmonary disease, diabetes, pregnancy, and others.

ES 341 Critical Analysis of Scientific Literature
Credits: 2
Prerequisites: STA 119, ES or OT major
Corequisites: OT 346
Type: LEC/DIS
Introduces the principles of critical analysis of scientific literature. Students will learn to access, interpret, and analyze research and review articles and information in oral presentations pertinent to their respective fields.

ES 342 Neuroscience I
Credits: 3
Prerequisites: ANA 407
Corequisites: None
Type: LEC
Covers fundamental neurophysiology and clinical neuroanatomy of sensory systems.

ES 343 Neuroscience II
Credits: 3
Prerequisites: ANA 407, ES 342
Corequisites: None
Type: LEC
A continuation of Neuroscience I, focusing on clinical neuroanatomy of motor systems and integration of sensory, motor, and cognitive functions.

ES 344 Neuroanatomy
Credits: 1
Prerequisites: ANA 407
Corequisites: None
Type: LEC
Examines the student to the anatomical structures associated with neurophysiological concepts discussed in ES 342 and ES 343.

ES 345 Neuroanatomy II
Credits: 1
Prerequisites: ANA 407
Corequisites: None
Type: LEC
Exposes the student to the anatomical structures associated with neurophysiological concepts discussed in ES 342 and ES 343.

ES 370 Biomechanics I
Credits: 4
Prerequisites: ANA 407, ES 380, MTH 121, PHY 107/PHY 151 or PHY 107
Corequisites: None
Type: LEC/LAB
Introduces the mechanical, neuromuscular, and anatomical bases of human movement. Analyzes quantitative and qualitative biomechanical analyses of multisegment motion from the perspective of joint and muscle mechanics, kinematics, and kinetics.

ES 380 Exercise Physiology
Credits: 3
Prerequisites: ANA 407, CHE 102, NTR 108
Corequisites: None
Type: LEC
Examines health promotion from a public health perspective, a community and corporate perspective, and in terms of individual behavior change.

ES 385 Exercise Assessment, Prescription, and Programming II
Credits: 3
Prerequisites: ANA 407, ES 380
Corequisites: None
Type: LEC/LAB
Two-semester course that examines theoretical and practical aspects of exercise testing, body composition, fitness evaluation, client interviews and education, exercise prescription, emergency procedures, program administration, and management.

ES 428 Health Promotion, Prevention & Wellness
Credits: 1
Prerequisites: completion of all other course and program requirements
Corequisites: None
Type: LAB
Conducted in settings conducive to the development/refinement of skills and abilities related to a professional role, under the guidance of an approved field supervisor and/or university personnel.

ES 429 Internship
Credits: 1
Prerequisites: ANA 407, ES 310
Corequisites: None
Type: LEC
Develops basic competencies necessary for the evaluation and assessment of needs, interests, and performance in comprehensive health-related fitness programming in compliance with American College of Sports Medicine guidelines. Provides skills training in the administration and interpretation of standard testing/assessment protocols in both on and off-campus laboratory settings.

ES 442 Applications in Exercise Science
Credits: 1
Prerequisites: ANA 407, ES 310
Corequisites: None
Type: LEC
Examines nutrition for athletes, energy systems for different activities, weight control, ergogenic aids, osteoporosis, and selected health problems among athletes related to nutritional deficiencies.
ES 496 Practicum
Credits: 1
Prerequisites: ANA 407, ES 200, ES 310, ES 380
Corequisites: None
Type: LAB
Provides an opportunity for the student to gain some practical experience in a field setting. Sites are selected based on the student’s career expectations. Arrangements must be made in conjunction with the clinical advisors on faculty.

ES 499 Independent Study
Credits: 1
Prerequisites: None
Corequisites: None
Type: TUT
Focuses on specific responsibilities of the nurse manager, including information management, human resource management, fiscal management, quality management, and management of change. Students apply critical thinking, decision-making, and leadership skills to studying these areas of responsibility. Must be taken in program sequence.

French

FR 101 Elementary French 1st Semester
Credits: 5
Prerequisites: None
Corequisites: None
Type: LEC
Language as heard and spoken; development of listening, speaking, reading, and writing; five class hours weekly plus regular drill with language recordings.

FR 102 Elementary French 2nd Semester
Credits: 5
Prerequisites: FR 101
Corequisites: None
Type: LEC
Language as heard and spoken; development of listening, speaking, reading, and writing; five class hours weekly plus regular drill with language recordings.

FR 104 Transitional Elementary French
Credits: 5
Prerequisites: None
Corequisites: None
Type: LEC
One-semester review course designed for students who have taken the Regents exams, but who are not yet able to go into the second year of language study. Involves development of all four language skills (listening, speaking, reading, and writing; five class hours weekly plus regular drill with language recordings).

FR 151 Intermediate French 1st Semester
Credits: 3
Prerequisites: FR 102 or FR 104
Corequisites: None
Type: LEC
Continuing study of the language, includes a brief review of basic elements and the introduction and practice of more precise linguistic features. Students further their listening and speaking skills through in-class activities, as well as independent work with sound files. Also develops students’ reading and writing skills through the use of literary and cultural texts.

FR 152 Intermediate French 2nd Semester
Credits: 3
Prerequisites: FR 151 or permission of the language director
Corequisites: None
Type: LEC
Continuing study of the language, including briefly reviewing basic elements and the introduction and practice of more precise linguistic features. Students further their listening and speaking skills through in-class activities, as well as independent work with sound files. Also develops students’ reading and writing skills through the use of literary and cultural texts.

FR 211 Studies in French Language and Culture I
Credits: 3
Prerequisites: FR 152 or permission of instructor
Corequisites: None
Type: LEC
Perfecting writing skills in preparation for advanced courses or study aboard: selections from prose, poetry, drama, or writings on contemporary issues and problems.

FR 212 Studies in French Language and Culture II
Credits: 3
Prerequisites: FR 211 or permission of instructor
Corequisites: None
Type: LEC
Perfecting writing skills in preparation for advanced courses or study aboard: selections from prose, poetry, drama, or writings on contemporary issues and problems.

FR 270 Intermediate Conversation
Credits: 3
Prerequisites: FR 152
Corequisites: None
Type: LEC
Continuing study of the language, includes a brief review of basic elements and the introduction and practice of more precise linguistic features. Students further their listening and speaking skills through in-class activities, as well as independent work with sound files. Also develops students’ reading and writing skills through the use of literary and cultural texts.

FR 271 Business French
Credits: 3
Prerequisites: FR 152
Corequisites: None
Type: LEC
Builds on the language proficiency acquired in 100-level French courses by introducing students to the vocabulary, idiom, and social conventions they must master to function in a business setting in the French-speaking world. Expect students to demonstrate proficiency both in the language skills taught in the course and in knowledge of the European and non-European business context. Among the anticipated assignments are oral comprehension exercises based on French news broadcasts, drafting of several business letters in French, and short business-related papers. No credit toward French major.

FR 301 Survey of French Literature I
Credits: 3
Prerequisites: FR 211-FR 212, or permission of instructor
Corequisites: None
Type: LEC
Introduces students to major currents of French literature and thought in selected readings from the Middle Ages, Renaissance, Classical period, and Enlightenment. The study of epic (La Chanson de Roland), romance (Yvain ou le chevalier au lion), autobiographical writing (Montaigne’s Essais), classical tragedy and comedy (Racine and Molière), the novel (La Princesse de Clèves and Candide), philosophical writing (selections from Descartes, Pascal, and Rousseau), and poetry (selections from Charles d’Orléans, Villon, Du Bellay, and Ronsard) emphasizes both literary and philosophical traditions, as well as textual interpretation.

FR 302 Survey of French Literature II
Credits: 3
Prerequisites: FR 211-FR 212, or permission of instructor
Corequisites: None
Type: LEC
Introduces students to major currents of French literature and thought in selected readings from the Middle Ages, Renaissance, Classical period, and Enlightenment. The study of epic (La Chanson de Roland), romance (Yvain ou le chevalier au lion), autobiographical writing (Montaigne’s Essais), classical tragedy and comedy (Racine and Molière), the novel (La Princesse de Clèves and Candide), philosophical writing (selections from Descartes, Pascal, and Rousseau), and poetry (selections from Charles d’Orléans, Villon, Du Bellay, and Ronsard) emphasizes both literary and philosophical traditions, as well as textual interpretation.
FR 331 Pre-Romanticism and Romanticism

Credits: 3
Prerequisites: FR 211-FR 212, or permission of instructor
Corequisites: None
Type: LEC
Begins with the study of Madame de Stael's De l'Allemagne and Chateaubriand's René and Atala for a sense of the origins of French Romanticism. The study of texts by Stendhal, Balzac, and Hugo focuses on the Romantic search for inspiration in the subject's emotional life, in exotic settings, and in the wealth of national legend.

FR 334 Poetry from Baudelaire to Surrealism

Credits: 3
Prerequisites: FR 211-FR 212, or permission of instructor
Corequisites: None
Type: LEC
Surveys French poetry from 1857—date of the publication of Les Fleurs du mal—to the years immediately following World War II when surrealism is on the decline. A series of schools, movements, and tendencies that constitute the historical frame of reference for the course characterizes the period, in which the works of poets who dominated the period are particularly emphasized.

FR 338 Women Writers of Francophone Africa

Credits: 3
Prerequisites: FR 211-FR 212, or permission of instructor
Corequisites: None
Type: LEC
Explores feminine writing—écriture féminine—as it has developed starting in the late 1970s in Francophone Africa. Focuses upon the differences between the concerns and themes voiced by African women writers and those raised by their male counterparts. Issues include religion, marriage, polygamy, education, the workplace, urban and rural life, love, and family life.

FR 341 The French Film

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines the works of some of the major movie directors of France since WWII. First Carné, Ophuls, Cocteau, then the directors of the "Nouvelle Vague": Truffaut, Resnais, Duras, Goddard. The last part of the course is devoted to a selection of more recent works, such as Au Revoir les Enfants, Ridicule, and Tous les Matins du Monde.

FR 343 Advanced Grammar and Composition

Credits: 3
Prerequisites: FR 211-FR 212, or permission of instructor
Corequisites: None
Type: LEC
Provides a more sophisticated understanding of French syntax and improves skill in fluent, written self-expression. Brief weekly compositions serve as a basis for the discussion of points of syntax and style. Students also become familiar with reference works, which will be of continuing use.

FR 349 Stylistics and Translation

Credits: 3
Prerequisites: FR 211-FR 212, or permission of instructor
Corequisites: None
Type: LEC
Introduces the objectives, techniques, and difficulties of translation to and from French. At the theoretical level, and through a number of explications de texte, students reflect on such issues as the distinction between an author and a narrator, the 'voice' in a text, textual 'intentions' vs. reader response. In practical terms, weekly translations of selected short texts should foster the development of respect for the linguistic, stylistic, and occasional cultural differences between English and French.

FR 350 Modern French Short Story

Credits: 3
Prerequisites: FR 211 and FR 212
Corequisites: None
Type: LEC
Surveys selection of modern French short stories sampling from French as well as Francophone writers and explores the means by which short stories achieve their effects within the restricted economy of the genre. Considers the stories both as narrative constructs and as reflections of the historical and cultural contexts in which they were written.

FR 351 French Literature in English Translation

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Upper-level literature course offered to non-majors who have an interest in literature but little or no training in the language. Organized by topic, the course sometimes focuses on an author (e.g. Montaigne, Flaubert) and sometimes on critical perspectives (e.g. French feminism).

FR 353 Problems of the French Novel

Credits: 3
Prerequisites: FR 211-FR 212, or permission of instructor
Corequisites: None
Type: LEC
Examines the evolution of the narrative genre (centered on the novel with reference to a few short stories) from La Princesse de Clèves to the 'New Novel'. Offers a close reading of some of the major works of Mme de Lafayette, Prévo, Stendhal, Auroville, Camus, and Claude Simon.

FR 393 Study in Absentia

Credits: 1
Prerequisites: None
Corequisites: None
Type: TUT
For students enrolled in the Study Abroad Program sponsored by the University at Buffalo (see Study Abroad section in this catalog).

FR 404 Introduction to the Structure of Modern French

Credits: 3
Prerequisites: FR 211-FR 212, or permission of instructor
Corequisites: None
Type: LEC
Describes present-day French from a modern linguistic standpoint. Successively covers phonology, morphology, and syntax and lexical change to give the student a better understanding of the structure of French and a broader comprehension of the function of language in general. Weekly travaux pratiques enable students to apply the analytical theory to real language problems.

FR 420 History of the French Language

Credits: 3
Prerequisites: FR 211-FR 212, or permission of instructor
Corequisites: None
Type: LEC
Acquaints students with the internal and technical linguistic changes that characterize the emergence of French from Latin, as well as the external and historic events that influence this development. Discusses the nature of language change, the development of dialects, and the emergence of national standards. Consists of two lectures and one discussion period per week involving linguistic problem sets and brief translations of early French texts.

FR 429 Advanced Business French

Credits: 3
Prerequisites: FR 211 - FR 212, or permission of instructor
Corequisites: None
Type: SEM
Seeks to familiarize students with the cultural and professional aspects of doing business in France. Topics include tariffs and quotas, the role of the EU and the euro, genetically modified foods, the environment, and globalization. Also covers French domestic issues, including the 35-hour work week, the strained retirement system, domestic political wrangling, the French press, and activist trade unions. This course also stresses practical skills such as business correspondence, how to read reports and other documents, how to follow the news (both written and televised) with full knowledge of its bias (national and political), and how to interview or give a business presentation.

FR 480 Seminar for Majors

Credits: 3
Prerequisites: FR 211-FR 212, or permission of instructor
Corequisites: None
Type: SEM
Variable content.

FR 496 Internship/Practicum

Credits: 1
Prerequisites: Permission of Instructor
Corequisites: None
Type: TUT
Hands-on experience in language and cultural studies at institutions and community organizations in the Western New York area.

FR 498 Undergraduate Research and Creative Activity

Credits: 1
Prerequisites: Permission of Instructor
Corequisites: None
Type: SEM
Students collaborate with faculty research mentors on an ongoing faculty research project or conduct independent research under the guidance of a faculty member.

FR 499 Independent Study

Credits: 1
Prerequisites: FR 211-FR 212, or permission of instructor
Corequisites: None
Type: TUT
Students who have demonstrated the ability to perform upper-level coursework may, on occasion, wish to research a topic not available through regular course offerings. Such students may, with permission of a supervising faculty member and the director of undergraduate studies, enroll in FR 499.


**General Education**

**UGC 111 World Civilizations I**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC/REC  
UGC 111 is usually completed before UGC 112. Introduces students to the development of world civilizations from prehistory to about 1500, and concerns the peoples, forces, and ideas that have shaped the way individuals have experienced (and still do experience) the world. Features global perspectives, focuses on the origins and development, geographical context, and the interactions of world cultures. All sections of the course share common goals. Different sections emphasize different themes and perspectives.

**UGC 112 World Civilizations II**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC/REC  
UGC 112 is usually completed after UGC 111. Introduces students to the continuing development of world civilizations from about 1500 to the present, and concerns the peoples, forces, and ideas that have shaped the way individuals have experienced (and still do experience) the world. Features global perspectives, focuses on the origins and development, geographical context, and the interactions of world cultures. All sections of the course share common goals. Different sections emphasize different themes and perspectives.

**UGC 211 American Pluralism and the Search for Equality**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
UGC 211 is usually completed after UGC 111-UGC 112. Focusses on the changing nature of American society, examining the rich diversity of cultural experiences in America and issues associated with diversity. Introduces students to five important areas of American experience and culture: race, gender, ethnicity, class, and religious sectarianism. Examines writings by and about Americans of color; women; and people from diverse ethnic, class, and religious groups. Approaches their experiences through a number of traditional academic disciplines.

**UGC 302 Great Discoveries in Science: The Microworld**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
The Microworld focuses on experimental studies of microscopic phenomena, including such areas as quantum theory, molecular theory, DNA, etc.  
UGC 302 and UGC 303 focus upon selected great discoveries of science, presenting a particular body of scientific facts and concepts and connecting them with the process of science, related history and philosophy, and the interdependence of science and technology. These courses engage non-science students in a meaningful analysis of scientific developments and methodology, building on the student's prior knowledge of science, social science, arts and literature. These courses emphasize the central ideas that set the framework for a discipline and its great discoveries. Selected examples from diverse fields provide a breadth that complements the depth offered in the prerequisite introductory-level science course. The course focus varies by section. Coverage may include the biology of women, microbiology in our daily lives, the solar system, or medical implant controversies. Whether the matters be medical, environmental, or issues of national defense, students must be able to sort fact from fantasy, accident from design, research from quackery. They must feel secure enough in the world of science to participate in those decisions which will determine the quality of their lives, and that of their world.  
Either UGC 302 or UGC 303 meets the general education Depth requirement.

**UGC 303 Great Discoveries in Science: The Macroworld**

Credits: 3  
Prerequisites: A one-year sequence of introductory-level science and general education mathematics, computer sciences, or statistics is recommended.  
Corequisites: None  
Type: LEC  
The Macroworld involves larger and longer-term phenomena such as evolution, plate tectonics, astrophysics, etc.  
UGC 302 and UGC 303 focus upon selected great discoveries of science, presenting a particular body of scientific facts and concepts and connecting them with the process of science, related history and philosophy, and the interdependence of science and technology. These courses engage non-science students in a meaningful analysis of scientific developments and methodology, building on the student's prior knowledge of science, social science, arts and literature. These courses emphasize the central ideas that set the framework for a discipline and its great discoveries. Selected examples from diverse fields provide a breadth that complements the depth offered in the prerequisite introductory-level science course. The course focus varies by section. Coverage may include the biology of women, microbiology in our daily lives, the solar system, or medical implant controversies. Whether the matters be medical, environmental, or issues of national defense, students must be able to sort fact from fantasy, accident from design, research from quackery. They must feel secure enough in the world of science to participate in those decisions which will determine the quality of their lives, and that of their world.  
Either UGC 302 or UGC 303 meets the general education Depth requirement.

**Geography**

**GEO 100 Geographic Perspectives and World Issues**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Examines the geography of the emerging global village, especially the stress between the increasing globalization of human societies and natural habitats, and their idiosyncratic traits. Deeply rooted in today's changing world, the course surveys regions of the world and the contemporary issues facing them.

**GEO 101 Earth Systems Science I**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Earth Systems Science examines modern environmental problems through quantitative methods, analysis, and modeling grounded in basic and applied science and research. The goal of the course is to introduce students to the fundamental processes that dominate the atmosphere, hydrosphere, lithosphere, and biosphere, their characteristics and complex interactions, and their impact on human life and society.

**GEO 102 Introduction to Human Geography**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Introduction to thinking about human activities from a critical geographic perspective. While considering the "why of where," students will be exposed to the global dynamics of urbanization, migration, economic development, international relations, geopolitics, and cultural geographies.

**GEO 103 Geography of Economic Systems**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Examines the diverse economic systems that characterize a world economy in rapid transition.  
Highlights the complex processes of globalization and its impact on regions, cities, and countries. Examines the organization of economic activities and resources in the global economy.
GEO 106 Earth Systems Science II
Credits: 4
Prerequisites: GEO 101
Corequisites: None
Type: LEC/LAB
Examines climate changes of the past, present and future. Considers the various causes of past and present climate change and how to predict future changes. Describes predicted environmental and social impacts of, and possible solutions to, future climate change.

GEO 120 Maps and Mapping
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Provides the knowledge required to be an intelligent map user. It is also designed to prepare students for further studies in geography, cartography, and geospatial technologies. Topics include map making and coordinate systems, issues regarding map scale and projections, navigation and way finding using maps, techniques of thematic mapping, introductions to remote sensing and geographic information systems, emerging mapping technologies and applications, and using internet mapping services.

GEO 200 The Ocean World
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces oceanography and its relationship to environmental, economic, and strategic aspects. Considers the impact of humans on the ecological balance among the oceans, continents, atmosphere, and living things, as well as ports, ships and maritime law.

GEO 201 Disasters: A Study of Hazards
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines the occurrence, use, management, and conservation of water and water resources in the U.S. and around the world. The course further discusses the environmental, economic, and social implications of floods, droughts, dams, water usage, and waste water, as well as current issues in water quality, water pollution, and water resource regulation.

GEO 230 Dynamics of International Business
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines the rapidly changing dynamics of the international business environment and its impact on corporate strategies and patterns of international trade, investment and development. Covers the political, legal, technological and cultural underpinnings of the global economy. Provides students with a solid foundation for conducting international business research and making sense of current events.

GEO 333 Bases of World Commerce
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces students to the interconnections among countries and regions; also examines conditions leading to trade, and to barriers to the movement of goods.

GEO 334 International Environments and Commercial Problems
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces oceanography and its relationship to environmental, economic, and strategic aspects. Considers the impact of humans on the ecological balance among the oceans, continents, atmosphere, and living things, as well as ports, ships and maritime law.

GEO 335 Water Resources
Credits: 3
Prerequisites: GEO 101 or GLY 101 or permission of instructor
Corequisites: None
Type: LEC
Examines the occurrence, use, management, and conservation of water and water resources in the U.S. and around the world. The course further discusses the environmental, economic, and social implications of floods, droughts, dams, water usage, and waste water, as well as current issues in water quality, water pollution, and water resource regulation.

GEO 347 Climatic Geomorphology
Credits: 3
Prerequisites: GEO 101 or GLY 101 or permission of instructor
Corequisites: None
Type: LEC
Introduces land-forming processes at work on the Earth's surface, including water, wind, waves and ice. Emphasizes the roles of climate and human impact on earth surface processes, and it considers the hazardous consequences of these processes, such as flooding, landslides, and coastal erosion.

GEO 348 Landform Development
Credits: 3
Prerequisites: GEO 101 or GLY 101 or permission of instructor
Corequisites: None
Type: LEC
Studies plate tectonics, structure, volcanism, minerals, rocks, weathering, slope development, and fluvial and coastal geomorphology.

GEO 350 Landform Field and Laboratory Techniques
Credits: 4
Prerequisites: GEO 101 or GLY 101 or permission of instructor
Corequisites: None
Type: LEC/LAB
Introduces data collection techniques in Earth Systems Science. Students will actively participate in the collection and analysis of data using a wide range of field and laboratory equipment, with all activities linked to relevant environmental and geomorphic issues. Students will develop and enhance their skills in data collection, reduction, and analysis, analytical thinking, scientific writing, and the preparation of professional reports.

GEO 352 Introduction to Soils
Credits: 3
Prerequisites: GEO 101 or GLY 101 or permission of instructor
Corequisites: None
Type: LEC
Introduces the concepts of soil science, composition and classification of soils, and the spatial distribution of major soil categories. Analyzes soil properties, soil/plant relationships, nutrients, land management practices, and ecological and engineering problems.

GEO 356 Urban Systems Geography
Credits: 3
Prerequisites: GEO 103 or permission of instructor
Corequisites: None
Type: LEC
Provides an introduction to the knowledge areas of urban systems and structure, and a brief overview of fundamentals and general information that one needs to build upon in order to become a professional urban geographer. The course examines the formation and growth dynamics of cities, interprets the mechanism under which the urban space functions, and observes the industrial, residential, migratory, environmental, planning and transportation aspects of urban society. Social aspects of urban systems are covered in GEO 367.

GEO 367 Urban Social Geography
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces human activities central to the internal working of cities in the context of globalization, fragmentation, and difference. Students will consider theories about how society and space mutually condition each other in processes of social stratification and discrimination that foster class, race, gender, and other differences and cause their expression on the urban landscape. Structural aspects of urban systems are covered in GEO 366.

GEO 381 Cartography
Credits: 4
Prerequisites: GEO 120
Corequisites: None
Type: LEC/LAB
Introduces fundamentals of computer cartography, which is the study and practice of making map representations of the Earth. Provides practical training in the techniques for the representation, manipulation and display of spatial data using computer software.

GEO 389 Business Geographics
Credits: 3
Prerequisites: GEO 103, GEO 120
Corequisites: None
Type: LEC/LAB
Explores the application of GIS in business. Storage and spatial referencing of data are two processes that need to be carried out to make any business successful. GIS can help not only in these tasks, but also in identification of patterns and relationships that can save companies money and increase profit.
GEO 410 Univariate Statistics in Geography
Credits: 4
Prerequisites: None
Corequisites: None
Type: LEC/LAB
Introduces probability as a measure of uncertainty. Addresses the use of such measures of uncertainty for describing data, and for making inferences about large populations from small samples. These descriptive and inferential aspects of statistics are illustrated using geographic examples from a wide variety of different fields.

GEO 411 Multivariate Statistics in Geography
Credits: 3
Prerequisites: GEO 410 or equivalent
Corequisites: None
Type: LEC
Provides an introduction to techniques of multivariate analysis. Topics include ANOVA, simple regression, multiple regression, logistic regression, principal components analysis, and cluster analysis.

GEO 412 Geography of Health
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies human disease and health from an ecological perspective. Students gain an appreciation for the geographic variation in the rates of both infectious and chronic diseases. The effect of the environment will be examined in terms of population density, climate, socio-economic conditions, political situation, mobility, urbanization, pollution, cultural practices, and access to health care.

GEO 418 Population Geography
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies human disease and health from an ecological perspective. Students gain an appreciation for the geographic variation in the rates of both infectious and chronic diseases. The effect of the environment will be examined in terms of population density, climate, socio-economic conditions, political situation, mobility, urbanization, pollution, cultural practices, and access to health care.

GEO 419 Transportation and Society
Credits: 3
Prerequisites: GEO 410, GEO 102, or GEO 103
Corequisites: None
Type: LEC
Studies evolution of the U.S. transportation system. Examines contemporary transportation problems; including provision of transportation, transport networks, transport flows, urban transportation, logistics, and information technologies. Also considers transport and urban forms.

GEO 420 Transportation and Spatial Information
Credits: 3
Prerequisites: GEO 481
Corequisites: None
Type: LEC/LAB
Overview of data used in transportation, including travel behavior surveys, vehicle locations, and traffic information. The course also covers GIS-T data models, data accuracy, primary and secondary data collection and storage approaches, geo-processing of network data, principles of Intelligent Transportation Systems, and location-based services.

GEO 425 Industrial/Business Geography
Credits: 3
Prerequisites: GEO 330 or permission of instructor
Corequisites: None
Type: LEC
Industry dynamics and regional change in a globalized world. Understanding the relationship between the firm and the region, the activities of other agents of regional development (e.g., universities, government, non-government sectors, labor markets) will also be taken into consideration.

GEO 426 Senior Geography Seminar
Credits: 3
Prerequisites: senior standing in geography; for majors only
Corequisites: None
Type: SEM
Topics vary each semester.

GEO 430 Applied Urban Geography
Credits: 3
Prerequisites: GEO 410 and introduction to ArcView
Corequisites: None
Type: LEC/LAB
Explores spatial structure of urban and metropolitan areas. Topics include (1) the changing form of urban areas over time; (2) the behavior of people that gives rise to particular urban forms; (3) the ways in which the internal structure of cities affects individual and group behavior and welfare; and (4) the various ways in which people perceive and interact with their environment. The lab provides students the opportunity to analyze basic data, using cartographic and statistical modes of analysis and the resources of the Geographical Information and Analysis Lab (GIALL). Students in the lab must take the lecture portion concurrently; however, students in the lecture may elect not to take the lab for additional credit.

GEO 435 Conservation Biogeography
Credits: 3
Prerequisites: GEO 356 or BIO 309 or SSC 315 or permission of instructor
Corequisites: None
Type: LEC
Examines components of biodiversity: what it is, why we like it, where it is highest, and what threatens it. Focuses on the application of spatial solutions to biodiversity maintenance in wildlands, and to biodiversity management in working landscapes (especially logged but also farmed). Case studies and a field trip are employed to explore the usefulness of the methods.

GEO 444 Advanced Earth System Science
Credits: 3
Prerequisites: GEO 101 or GYa 101 or permission of instructor
Corequisites: None
Type: LEC
Examines the basic theories and concepts in Earth System Science investigating the complexity of physical, chemical, and biological processes in the geosphere, atmosphere, hydrosphere, biosphere, and ecosphere. Fundamentals understanding of the Earth system includes emphasizing these dynamic processes and their interaction that extend over a wide range of spatial and temporal scales. The lecture aims to create an interdisciplinary learning environment that supports understanding and communicating with other disciplines about the complex environmental processes. Possible impact and solutions to local, regional, and global environmental problems are assessed through modeling scenarios of changes in biogeochemical cycles.

GEO 445 Restoration Ecology
Credits: 3
Prerequisites: GEO 356 or BIO 309 or SSC 315 or permission of instructor
Corequisites: None
Type: LEC
Restoration ecology is the art and science of repairing lands that have become damaged by natural or human disturbance. Examines ecological and social reasons for restoration. Focuses on how to identify and repair the key physical, chemical, and biotic components of damaged ecosystems. Case studies and a field trip help are used to develop the theories and methods.

GEO 449 Fluvial Geomorphology
Credits: 3
Prerequisites: GEO 347 or GEO 348 or GYa 312 or permission of instructor
Corequisites: None
Type: LEC/REC
Examines the origin, geometry, water flow, and sediment transport associated with streams and rivers, and how these processes and forms vary in time and space. Places particular emphasis on the analytic description of physical processes, the adjustment of rivers to natural and human-induced disturbances, the interactions between fluvial processes, water quality and aquatic habitat, and emerging areas of research.

GEO 451 Special Topics in Cartography
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Advanced seminar. Topics vary each semester. Requires independent projects in the field being covered.

GEO 454 Soils Laboratory Methods
Credits: 3
Prerequisites: GEO 352
Corequisites: None
Type: LEC/LAB
Studies soils laboratory techniques; involves field work (soil sampling) and soil surveying.

GEO 460 Geography of Development
Credits: 3
Prerequisites: GEO 103 or GEO 330 or GEO 333 or permission of instructor
Corequisites: None
Type: LEC
Examines how regions, cities, and countries are engaged in economic, political, and institutional strategies in order to tackle problems related to poverty, underdevelopment, economic decline, and/or economic stagnation. Attention is given to the influences of local and global forces, actors, and policies on regional and national competition and development.

GEO 462 Network and Location Analysis
Credits: 4
Prerequisites: GEO 481 and MTH 121
Corequisites: None
Type: LEC/LAB
Examines the basic theories and concepts behind transportation networks, their structure and operation as well as their need in different applications such as location theory. Approaches topics from both a theoretical and a GIS perspective. There will be a weekly laboratory to provide hands-on experience in the different topics.
GEO 464 Mobility and Flows
Credits: 4
Prerequisites: GEO 419 and GEO 481
Type: LEC/LAB
Studies the human decision-making process underlying spatial mobility that results in the creation of patterns and daily routines. Covers the different environments and theories involved in the process, as well as the modeling techniques that have been used, emphasizing the application of Geographic Information Systems.

GEO 470 Integrated Environmental Management
Credits: 3
Prerequisites: GEO 101 or GLY 101 or permission of instructor
Corequisites: None
Type: LEC
Introduces an integrated framework for natural resource management that addresses biophysical, social, and economic issues affecting natural resources such as water, soil, air, plant and animal communities and their use through agriculture, forestry, and fishery. The multidisciplinary approach equips the participants with the necessary tools and techniques to develop sound management policy and practice at the watershed scale from small watersheds to large basins. Outlines methods for problem definition and goal setting to elect appropriate and effective management strategies and procedures for monitoring and implementation.

GEO 475 Landscape Modeling with GIS
Credits: 3
Prerequisites: GEO 481 or permission of instructor
Corequisites: None
Type: LEC
Utilizes concepts and software tools to appropriately analyze geo-spatial data and model environmental processes. The course uses exercises related to physical processes, but also presents and discusses methods and examples in the fields of environmental science, ecology and human geography.

GEO 479 GIS and Environmental Modeling
Credits: 3
Prerequisites: GEO 481
Corequisites: None
Type: LEC/LAB
Emphasizes GIS applications for environmental modeling, which is loosely defined as any study that contains an environmental element. This is an intermediate level GIS course. GIS methodology design is the primary focus of the lectures and the following topics are discussed: basic GIS methods, using statistics to test and validate GIS methods, and integrating GIS with environmental models. Case studies are used to support the discussion of method design and help students select appropriate GIS methods for a project. The hands-on laboratory exercises focus on learning advanced GIS methods in order to help students implement a GIS project of their interest.

GEO 481 Geographic Information Systems
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC/LAB
Provides a general introduction to the principles and applications of geographic information systems (GIS). The lectures cover several fundamental aspects of GIS: (1) the basics of a GIS system, (2) GIS data and sources of data, (3) GIS analysis functions, and (4) GIS applications and related issues. The laboratory exercises are based on the leading GIS software, ArcGIS, and are designed to help students understand the lecture materials and gain hands-on experiences in GIS data acquisition, spatial database management, spatial analysis, and mapping.

GEO 482 Locational Analysis
Credits: 2
Prerequisites: None
Corequisites: None
Type: LEC
Surveys the basic types of geographic location problems encountered in the real world and examines basic techniques applied to solve those problems.

GEO 483 Remote Sensing
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC/LAB
Introduces the principles and applications of remote sensing, and the basic techniques of digital image processing. The lectures introduce a number of fundamental topics of remote sensing: the interaction between energy and Earth surface, major sensor systems and images, basic techniques for image enhancement and image classification, classification accuracy assessment, and applications of remote sensing. The laboratory exercises are designed to help students understand and gain hands-on experiences in digital image process techniques introduced in the lectures.

GEO 484 GIS Applications
Credits: 3
Prerequisites: GEO 481
Corequisites: None
Type: LEC
Explores capabilities for micro- and minicomputer applications of geographic information systems, including such topics as data volumes, data partitioning, and database construction and maintenance. Explores applications to urban-planning and natural-resource management using ARC/INFO.

GEO 485 Cartography and Geographic Visualization
Credits: 3
Prerequisites: GEO 120 or GEO 381 or GEO 481 or permission of instructor
Corequisites: None
Type: LEC/REC
Provides an overview of cartographic design and visualization within the context of GIS and multi-media web presentation to enhance the visualization skills expected of a modern geographer. The course will cover both theoretical and practical issues associated with visual representation, cartographic design process, exploratory data analysis, data uncertainty, quality and generalization, thematic mapping, web designing, online mapping and other multi-media applications.

GEO 486 Spatial Decision-Support Systems
Credits: 3
Prerequisites: GEO 481
Corequisites: None
Type: LEC
Adds the spatial element to decision-support systems by integrating analytic modeling and GIS. Also considers issues in system design and implementation.

GEO 487 Thematic Cartography
Credits: 4
Prerequisites: None
Corequisites: None
Type: LEC
Applies formal principles of graphic design with skills of computer and manual cartographic production. Introduces principles and skills of computer-assisted cartographic production, and of photographic and digital-enhancement techniques that may be incorporated in the map production process.

GEO 488 GIS Design
Credits: 3
Prerequisites: GEO 481
Corequisites: None
Type: SEM/LAB
Emphasizes problems and methods for defining GIS user needs and the development cycle. Adapts methods and software engineering to the GIS planning process. Topics include product identification, data sources, system selection, and implementation scheduling.

GEO 489 GIS Algorithms and Data Structures
Credits: 4
Prerequisites: GEO 481
Corequisites: None
Type: LEC/LAB
Examines the data models for geographic information systems. Student programming projects emphasize alternative methods of implementing common GIS operations.

GEO 496 Geographic Internship
Credits: 3
Prerequisites: Permission of instructor
Corequisites: None
Type: TUT
For advanced students. Involves a work opportunity in a local governmental agency or firm. See the director of undergraduate studies for more information.

GEO 497 Geography Honors Program
Credits: 3
Prerequisites: Permission of instructor
Corequisites: None
Type: TUT
Students who have completed at least 96 credit hours and who have a minimum GPA of 3.5 in geography and overall are eligible to participate in the honors program. See the director of undergraduate studies for more information.

GEO 499 Independent Study
Credits: 1
Prerequisites: permission of instructor
Corequisites: None
Type: TUT
Explores fundamentals of nuclear physics, including interaction of radiation with matter; properties of nuclear forces; nuclear structure described by shell and collective models; nuclear reactions; radioactive decay processes; and properties of elementary particles.
**Geological Sciences**

**GLY 101 Global Environmental Science**

Credits: 3.5  
Prerequisites: None  
Corequisites: None  
Type: LEC/LAB  
Introduces important geological processes that have environmental impacts, ranging from earthquakes and volcanic hazards to landslides and flooding. The framework for learning these processes includes the water and rock cycle. Covers discussions of environmental philosophy and the significance for society of the environmental findings of science. The laboratory involves field measurements of streams, map analysis, an examination of fossils as they relate to the environment, meteorite impacts, and common rock-forming minerals. The GLY 101/GLY 102 sequence fulfills the university's general education natural science requirement.

**GLY 102 Global Environmental Science**

Credits: 3.5  
Prerequisites: GLY 101  
Corequisites: None  
Type: LEC/LAB  
Offers an interdisciplinary discussion of both natural and human-induced global environmental change at various scales (space and time). Provides a comprehensive description of how advances in the physical, biological, and geological sciences are being integrated to understand the interplay between the Earth's components (atmosphere, hydrosphere, lithosphere, and biosphere). Topics include the Earth's building blocks, the Earth through time, natural hazards, natural resources, and Earth system cycles (such as weather, climate change, and atmospheric pollution). The GLY 101/GLY 102 sequence fulfills the university's general education natural science requirement.

**GLY 103 Evolution of the Earth and Solar System**

Credits: 3.5  
Prerequisites: None  
Corequisites: None  
Type: LEC/LAB  
Overview of Earth's major physical phenomena, including mountain-building, volcanoes, plate tectonics and hydrologic processes. Emphasizes the interaction of Earth's processes and features as a global system and how these compare to those on other planets in the Solar System. Requires one field trip. Lab emphasizes major geologic processes, such as river development, impact cratering, and rock formation. The GLY 103/GLY 104 sequence fulfills the university's general education natural science requirement.

**GLY 104 Evolution of the Earth and Solar System**

Credits: 3.5  
Prerequisites: GLY 103  
Corequisites: None  
Type: LEC/LAB  
Examines the history of geology, the character of organic evolution, and the interaction of geological and biological processes that produce the history of the Earth. Emphasizes the geologic and biologic events that created and shaped Western New York. Lab focuses on the development of geologic regions in Western New York, the Moon and Mars. The GLY 103/GLY 104 sequence fulfills the university's general education natural science requirement.

**GLY 106 Geological Mapping Techniques**

Credits: 3  
Prerequisites: GLY 101 or GLY 103  
Corequisites: None  
Type: LEC/LAB  
Introduces geological maps, cross-sections and stratigraphic columns, the primary tools for conveying information in the earth sciences. Covers basic map-reading skills, mapmaking and cross-section construction, and interpretation. Introduces stereoscopic aerial photography and satellite imagery.

**GLY 107 Geology of the National Parks**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Examines the history of geology, the character of organic evolution, and the interaction of geological and biological processes that produce the history of the Earth. Emphasizes the geologic and biologic events that created and shaped Western New York. Lab focuses on the development of geologic regions in Western New York, the Moon and Mars. The GLY 103/GLY 104 sequence fulfills the university's general education natural science requirement.

**GLY 137 The Dinosaurs**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Explores dinosaurs as a biological group: their origin, anatomy, life habits, evolution, and extinction. Emphasizes new ideas on their physiology, behavior, and significance in the history of life. Uses dinosaurs to exemplify important evolutionary phenomena. There may be visits to the Buffalo Museum of Science and the Royal Ontario Museum, Toronto.

**GLY 215 Soft Rock I: Sedimentology**

Credits: 4  
Prerequisites: GLY 101-GLY 102 or GLY 103-GLY 104  
Corequisites: None  
Type: LEC/LAB  
Introduction to the origin of sedimentary rocks, including analysis of sediments and transport mechanisms, depositional environments, and recognition of common sedimentary rock types. Requires labs and field trip.

**GLY 216 Soft Rock II: Paleontology and Stratigraphy**

Credits: 4  
Prerequisites: GLY 215  
Corequisites: None  
Type: LEC/LAB  
Examines the character of the fossil record, its role in illuminating the nature of the evolutionary process, life's history, and use in interpretation of the age and environment of deposition of sedimentary rocks. Requires labs and field trip.

**GLY 305 Mineralogy**

Credits: 4  
Prerequisites: GLY 102 or GLY 104 and CHE 101 or GLY 161  
Corequisites: None  
Type: LEC/LAB  
Examines the fundamental principles of mineralogy, including mineral chemistry, mineral identification, phase diagrams, mineral structures, and elementary crystallography. Emphasizes environmentally important minerals. Requires lab.

**GLY 306 Petrology**

Credits: 4  
Prerequisites: GLY 305  
Corequisites: None  
Type: LEC/LAB  
Examines the fundamental principles of petrology, including origin, occurrence, and evolution of igneous and metamorphic rocks. Integrate geochemical principles based on plate equilibria with interpretation of mineral assemblages present in common rocks. Plate tectonics and regional distribution of rock types form the broad framework for the course materials. Requires a field trip.

**GLY 309 Ecology Lecture**

Credits: 3  
Prerequisites: BIO 200  
Corequisites: None  
Type: LEC  
Processes that control the abundance and distribution of organisms in their natural environments; emphasizing population, community and evolutionary ecology.

**GLY 310 Ecological Methods**

Credits: 2  
Prerequisites: GLY 309 or BIO 309  
Corequisites: None  
Type: LAB/LEC  
Field exercises to illustrate major concepts of modern ecology, and the techniques and procedures used in ecological research.
GLY 400 Comparative Paleobiology

Credits: 3
Prerequisites: knowledge of basic univariate statistics
Corequisites: None
Type: LEC

Presents major tools and concepts employed in the collection and analysis of morphological data (via geometric morphometrics and cladistics) in studies of the systematics, taxonomy, and evolutionary history of organisms, principally animals. Emphasizes practice rather than theory. Requires substantial written work.

GLY 405 Economic Geology

Credits: 3
Prerequisites: GLY 305 GLY 306
Corequisites: None
Type: LEC

This course will describe the nature and origin of the raw materials that sustain modern life styles and developed societ- ies. Lectures will emphasize the forma- tion of economic deposits of metallic and non-metallic minerals, methods of mineral exploration and exploitation, and the environmental consequences of utilizing mineral resources. The laboratory will focus on identification of ore and associated gangue minerals using microscopic and macroscopic methods.

GLY 407 Geological Field Training

Credits: 3
Prerequisites: GLY 326 and permission of instructor
Corequisites: None
Type: LEC/LAB

Applied field methods in geology. Geologic field trips and mapping from a mobile base in the western United States. Mapping projects include surficial deposits in Colorado and areas of increasingly complex sedimentary structure in Utah and Wyoming. This course is conducted outdoors and requires walking over difficult terrain and some exposure to the elements.

GLY 409 Advanced Ecology

Credits: 3
Prerequisites: BIO 309 or GLY 309 or BIO 411 or GLY 411
Corequisites: None
Type: LEC

Advanced course in the foundations of ecology emphasizing population and community ecology. Supplements lectures on basic ecological principles and models with discussions of both current and historically important issues.

GLY 411 Marine Ecology

Credits: 3
Prerequisites: GLY 309 or BIO 309
Corequisites: None
Type: LEC

Surveys tropical marine ecosystems, with an emphasis on coral reef communities. Examines processes controlling abundance and distribution of marine taxa using primary literature.

GLY 412 Field Course in Tropical Marine Ecology

Credits: 3
Prerequisites: GLY 309 or GLY 216
Corequisites: None
Type: LAB/LEC

An intensive two week field course in the Bahamas focusing on coral reef communities. Combining lectures, field- work, and laboratory analyses, students conduct in depth studies of Caribbean marine habitats.

GLY 414 Hydrogeology

Credits: 3
Prerequisites: CIE 354 or GLY 313, or permission of instructor
Corequisites: None
Type: LEC/LAB

Examines the occurrence and movement of water in the shallow subsurface, and its importance to water resource development and environmental pollution. Uses basic quantitative techniques for the prediction of water flow through porous and fractured geologic media. Laboratory includes hands-on experience with aquifer testing methods using wells located on campus. Primarily for students interested in the fields of hydrogeology, hydrology, environmental geology, and environmental and geotechnical engineering.

GLY 415 Clay Mineralogy

Credits: 4
Prerequisites: GLY 305
Corequisites: None
Type: LEC/LAB

Clay minerals are the most abundant minerals at the surface of the earth. As such, they are of extreme importance in understanding environmental problems. In addition, clay minerals have interesting and useful properties that give them important technological value. This course examines the structure and chemistry of clay minerals and attempts to relate these to their properties, both geological and technological. Clay minerals are difficult to study because they typically occur as fine-grained materials and exhibit a wide range of defects.

GLY 417 Stable Isotopes and the Environment

Credits: 3
Prerequisites: CHE 101, CHE 102, GLY 161 or equivalent
Corequisites: None
Type: LEC

Small differences in atomic mass among stable (non-radioactive) isotopes of the same element can give rise to differences in partitioning within the environment. This course explores how isotopes fractionate and how this behavior can be used to understand and decipher complex natural processes. The hydrologic cycle will be used as a staring point to illustrate and develop the framework for applying stable isotopes to examine the broader environment. This will provide a comprehensive knowledge base to apply the interpretation of stable isotope data to research questions in geologic, biologic, and environmental sciences in the second part of the course.

GLY 419 Environmental Geophysics

Credits: 3
Prerequisites: GLY 325 or permission of instructor
Corequisites: None
Type: LEC

Introduces the theoretical background and methods of application for several noninvasive near-surface geophysical imaging techniques, including seismic reflection/refraction, microgravity, magnetism, electromagnetics, resistivity, and ground-penetrating radar.

GLY 420 Environmental Geophysics Lab

Credits: 1
Prerequisites: None
Corequisites: None
Type: LAB

Provides hands-on experience with several environmental geophysics tech- niques; includes discussions of experi- ment design, acquisition, processing and interpretation.

GLY 423 The Hidden Planet: Volcanic Plumbing

Credits: 3
Prerequisites: GLY 306 or GLY 431
Corequisites: None
Type: LEC

Examines the generation, rise, storage, and movement of magmas, and impact cratering. Students develop knowledge of the processes whereby a geological problem is reduced to a mathematical model, the model is translated into a computer program, and the program is utilized to produce numerical and graphical results. The course assumes that students have a good familiarity with digital computers. Any mathematical complexities are explained as the course progresses.

GLY 424 Extraterrestrial Volcanism

Credits: 3
Prerequisites: GLY 326, GLY 431 or permission of instructor
Corequisites: None
Type: LEC

Examines volcanic deposits on solid bodies throughout the solar system, including the Moon, Mars, Venus, Io and Europa. Emphasizes understanding how different environments affect the mechanics and subsequent deposits of volcanic eruptions.

GLY 427 Modeling of Geologic Data

Credits: 3
Prerequisites: GLY 429
Corequisites: None
Type: LEC

Computer modeling of complex pro- cesses is becoming more important in a number of geological areas, such as risk assessment, movement of toxic con- taminants in an aquifer, crystallization of magmas, and impact cratering. Students develop knowledge of the processes whereby a geological problem is reduced to a mathematical model, the model is translated into a computer program, and the program is utilized to produce numerical and graphical results. The course assumes that students have a good familiarity with digital computers. Any mathematical complexities are explained as the course progresses.

GLY 428 Geological Disaster Prevention

Credits: 3
Prerequisites: GLY 101-GLY 102 or GLY 103-GLY 104
Corequisites: None
Type: LEC

Discusses disasters that may include those related to volcanoes, earthquakes, landslides, windstorms, tsunamis, river floods, and hazardous waste storage. Topics include models of geological phe- nomena, consequences of hazards, and risk assessment. Case studies analyzed for each phenomenon. A simulated crisis or debate on a controversial topic takes place during the last week of the course.

GLY 429 Analysis of Geologic Data

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Problems encountered in working with large data sets, formulating statistical hypo- theses, and interpreting the analysis in terms of the geologic problem. Includes data from petrology, sedimentation, mineralogy, geophysics, and palaeontology.
GLY 431 Volcanology

Credits: 3
Prerequisites: GLY 305 and GLY 306
Corequisites: None
Type: LEC
Examines the distribution, tectonic setting, and morphology of volcanoes. Includes investigations into effusive and explosive eruptions, emplacement of eruptive products, and eruption mechanisms.

GLY 432 Colonial Paleobiology

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC/LAB
Surveys the fossil record of vertebrate animals in order to understand their evolutionary history and the evidences used to reconstruct that history. Expects prior experience in basic paleontology or evolutionary biology.

GLY 433 Pyroclastic Rocks

Credits: 3
Prerequisites: GLY 431
Corequisites: None
Type: LEC
Examines principles of gravity, magnetism, seismology, and terrestrial heat flow. Also involves interpretation of the Earth’s interior structure, sea floor spreading, and the evolution of the Earth. Requires labs.

GLY 434 Geophysics

Credits: 3
Prerequisites: GLY 101–GLY 102 or GLY 103–GLY 104; GLY 325
Corequisites: None
Type: LEC/LAB
Describes the theory of surface and interfacial thermodynamic properties, how these properties are experimentally determined, the basis for computations of surface and interfacial free energies, and how the surface properties of minerals can be related to their chemical composition and crystal structures. Gives particular emphasis to those minerals that naturally occur in a colloidal form (the clay minerals), as well as to other geological materials, such as volcanic ash, that can occur in colloidal sizes.

GLY 435 Quaternary Dating and Paleoclimate

Credits: 3
Prerequisites: GLY 312, GLY 313
Corequisites: None
Type: LEC
Explores the Earth’s large swings in climate over the past 2 million years, how they are documented, the various dating techniques used to place them into a chronological framework, and the implications for how the Earth’s climate system operates. Foci on marine sediment, ice core, and terrestrial archives of glacial and interglacial cycles, abrupt climate change, past warm periods analogous to our future world, and techniques used to date these records.

GLY 436 Advanced Environmental Hydrogeology I

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC/LAB
Addresses the movement and behavior of contaminants in ground water. Emphasizes the underlying physics of water, solute, and particle transport in lecture, hands-on numerical simulation or field experiments. Prior completion of an introductory hydrogeology course is highly recommended.

GLY 437 Advanced Environmental Hydrogeology II

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC/LAB
Studies multi-phase flow in contaminant hydrogeology. Topics include physics and chemistry of multiple phases, modeling of multi-phase flow and transport, and remediation on nonaqueous phase liquids.

GLY 438 Advanced Geochimistry

Credits: 3
Prerequisites: CHE 102 or equivalent
Corequisites: None
Type: LEC/LAB
Presents the chemical principles governing natural water chemistry and the behavior of anthropogenic pollutants. Emphasizes topics such as the evolution of groundwater chemistry, thermodynamics of water-rock interactions at low temperatures, and prediction of pollutant fate in aquatic systems.
GLY 477 Environmental Fluid Transport
Credits: 3
Prerequisites: MTH 121, PHY 101
Corequisites: None
Type: LEC
Calculus-based course that provides students with the capability to analyze natural fluid dynamical processes. Topics include rheology of surficial materials, hydrostatics and aerostatics, equations of motion for fluid dynamics including Navier-Stokes equation, open-channel flow, kinematic waves, hydraulic jumps, advection-diffusion, dynamical and geometric similarity. Extensive use of computational tools to analyze flows and to organize fluid dynamical data.

GLY 478 Advanced Field Methods
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Teaches students to map, analyze, evaluate and interpret field data related to complex geological stratigraphy and structures, natural hazards, and Quaternary deposits. Students study the relationship of their geological work to cultural activities, particularly the exploitation of solid-earth resources and risk assessment. The course consists of in-depth mapping exercises in the field coupled with lectures.

GLY 480 Geological Evolution of North America: Appalachian Tectonics
Credits: 3
Prerequisites: GLY 161, GLY 215, GLY 306, GLY 326
Corequisites: None
Type: LEC
Provides students with a familiarity of the elements that support the concepts inherent in plate tectonics. Demonstrates the application of tectonics to the geological history of eastern North America, primarily the Appalachians. Illustrates the multidisciplinary nature of geological synthesis through in-depth studies of classic areas in the Appalachians. Involves an optional spring field trip to the central and southern Appalachians.

GLY 481 Geological Evolution of North America: Western Cordillera
Credits: 3
Prerequisites: GLY 216, GLY 306, GLY 326
Corequisites: None
Type: LEC
Provides students with a basic familiarity of geology of the western cordillera of North America. Illustrates the multidisciplinary nature of geologic syntheses through in-depth studies of this complex mountain range that extends from Mexico to Alaska. Emphasizes the genesis and emplacement of igneous rocks, major deformational episodes, the cause of earthquakes, mechanism of faults, origin of volcanoes, source of mineral deposits, and major sedimentation stages.

GLY 493 Pegrum Colloquium
Credits: 1
Prerequisites: None
Corequisites: None
Type: SEM
Familiarizes senior geology students with a broad range of topics that are of current interest to professional geologists. The course also acquaints students with professional presentations. The course consists of a weekly colloquium presented by a researcher active in a field of present import. Preceding the colloquium, readings from scientific journals introduce students to the topic to be discussed.

GLY 497 Departmental Honors Senior Thesis
Credits: 3
Prerequisites: MTH 141 and MTH 142, PHY 107 and PHY 108, CHE 101 and CHE 102, 3 geology courses
Corequisites: None
Type: TUT
Accepted seniors pursue a specialized, independent study leading to an Honors Thesis. The Department of Geology requires maintenance of a 3.25 or higher GPA, completion of a senior thesis and two additional 400 level Geology courses as well as the usual departmental degree requirements.

GLY 498 Undergraduate Research
Credits: 1
Prerequisites: Permission of Instructor
Corequisites: None
Type: TUT
Students collaborate with faculty research mentors on an ongoing project in a faculty member’s laboratory or conduct independent research under the guidance of a faculty member. This experience provides students with an inquiry based learning opportunity and engages them as active learners in a research setting.

GLY 499 Independent Study
Credits: 1
Prerequisites: permission of instructor
Corequisites: None
Type: TUT
Selection and study of topics not offered as regular courses.

German

GER 101 Elementary German 1st Semester
Credits: 5
Prerequisites: None
Corequisites: None
Type: LEC
Develops listening, speaking, reading, and writing skills in a communicative context; for beginners.

GER 102 Elementary German 2nd Semester
Credits: 5
Prerequisites: GER 101
Corequisites: None
Type: LEC
Develops listening, speaking, reading, and writing skills in a communicative context; for beginners.

GER 104 Transitional Elementary German
Credits: 5
Prerequisites: None
Corequisites: None
Type: LEC
Review course for students with the Regents diploma or with prior elementary-level instruction.

GER 111 Reading German for Beginners I
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Permits intensive practice in learning specialized vocabulary and concepts of German business, along with reading business texts and developing conversational skills in business situations.

GER 112 Reading German for Beginners II
Credits: 3
Prerequisites: GER 101
Corequisites: None
Type: LEC
Permits intensive practice in learning specialized vocabulary and concepts of German business, along with reading business texts and developing conversational skills in business situations.

GER 152 Intermediate German II
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Provides further practice in the language with increased attention to conversation- and written skills; helps students attain intermediate-level proficiency.

GER 271 German for Business
Credits: 3
Prerequisites: intermediate proficiency
Corequisites: None
Type: LEC
Permits intensive practice in learning specialized vocabulary and concepts of German business, along with reading business texts and developing conversational skills in business situations.

GER 272 German for Business
Credits: 3
Prerequisites: intermediate proficiency
Corequisites: None
Type: LEC
Permits intensive practice in learning specialized vocabulary and concepts of German business, along with reading business texts and developing conversational skills in business situations.

GER 301 Survey of German Cultural History I
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Explores major cultural and intellectual movements in German thought, society, literature, and the arts within the context of German history. The first semester covers the period from earliest Germanic times to 1750, the second from 1750 to the present. Classes are normally conducted in German.

GER 302 Survey of German Cultural History II
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Explores major cultural and intellectual movements in German thought, society, literature, and the arts within the context of German history. The first semester covers the period from earliest Germanic times to 1750, the second from 1750 to the present. Classes are normally conducted in German.

GER 314 German Literature Survey
Credits: 3
Prerequisites: Intermediate Proficiency
Corequisites: None
Type: LEC
Survey of German literature from Germanic times to present. Taught in German.
GER 337 Advanced Conversation and Composition
Credits: 3
Prerequisites: intermediate proficiency
Corequisites: None
Type: LEC
Enhances the speaking and writing skills of students who have attained intermediate-level proficiency. Activities include intensive small-group discussions on topics of current interest, and frequent writing exercises to refine compositional skills. Instruction exclusively in German.

GER 338 Stylistics and Translation
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Allows analysis of and practice in various styles of expression in German, as well as the study of idiomatic usages in the language. Instruction is exclusively in German.

GER 340 20th Century Fiction
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Prose of early 20th century, Weimar, DDR, exile literature and post-war.

GER 351 German Literature in Translation
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Survey of masterpieces of German literature in English translation.

GER 404 Readings in Old Norse Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Involves readings in Norse mythology and the Icelandic sagas, as well as the cultural history of the Vikings.

GER 408 The Structure of Modern German Grammar
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Incorporates linguistic analysis of the phonetic, phonological, morphological, and syntactic structure of German. Includes a survey of the more important theories of German syntax, as well as preliminary investigation into semantics, if time allows.

GER 410 Topics
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Intensive research on a selected topic in German studies.

GER 414 History of the English Language
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces the linguistic and cultural development of the English language from its beginnings to the present.

GER 415 History of the German Language
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces the linguistic and cultural development of the German language from its beginnings to the present. Instruction is usually in German.

GER 420 Grimm’s Fairy Tales
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Allows in-depth study of traditional Märchen and Sagen, and Kunst-Märchen, as well as a survey of Germanic mythologies and legends. Instruction is usually in German.

GER 439 German Prose: The Novelle
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies the masterworks of the novelle genre in German literature from the romantic period to the early twentieth century. Readings and discussion are in German.

GER 440 German Prose: The Novelle
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces the study of idiomatic usages in the language. Instruction is exclusively in German.

GER 444 Topics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Explores a selected topic in German linguistics, literature, or cultural history.

GER 445 Topics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Explores a selected topic in German linguistics, literature, or cultural history.

GER 449 Topics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Explores a selected topic in German linguistics, literature, or cultural history.

GER 464 Topics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Explores a selected topic in German linguistics, literature, or cultural history.

GER 469 Contemporary Drama and Film
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
German theater and cinema from the 1960s to present.
WS 205 Women in the Global System

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Explores how the current expansion of the world market is overturning the seclusion of women in traditional societies and looks at the consequences of globalization on the lives of women throughout the world. Women in developing countries share common patterns of location and differentiation within the international division of labor. Examines how women are struggling to represent their identities in the midst of rapid changes in their societies. Examines why more and more women are becoming active in the international human rights movement. Looks at how women are attempting to shape the discourse of development in different regions of the world economy. Intended to develop a multidisciplinary approach to gender and more specifically, to understand how gender is constructed by political, economic, and cultural discourses in industrialized and industrializing societies, and to understand the differences between the lived experiences of women in these societies, the heterogeneous nature of women based on class, race, religion, and nationality, and how women's lives are changing in the context of the global economy.

WS 213 Women in Contemporary Society

Credits: 3
Prerequisites: none
Corequisites: none
Type: SEM
Explores the roles, functions, practices, and consciousness of women cross-culturally based in various U.S. communities. Focuses on the socio-cultural history of women's movements, issues and multiple oppressions. By understanding and examining race, class, gender, sexuality and nationality, students will learn how to think, read, and write in a critical and creative framework. Students will discover the importance of "re-claiming and education."

WS 222 Special Topics

Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Topics vary according to faculty/instructors.

WS 225 Violence in a Gendered World

Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Surveys components in the spectrum of gender-based violence, in the U.S. and in some other countries. Historical, legal, sociological, psychological, literary and first person accounts comprise the course readings. Students will gain an understanding of the dynamics of violence against women and children, social movements that attempt to ameliorate it, and how gender, race, class and theoretical grounding influence local, national and global efforts to end violence and empower women.

WS 227 Feminist Essay

Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Examination of what constitutes a feminist essay and how the essay can be used as a tool for social and political change. Although course readings and discussions will focus on works by contemporary women writers, emphasis will be placed on the students' own writings. Each student will be expected to present current writing, pertinent to present study, to the group for discussion and feedback. A writing sample is required prior to admission to the seminar.

WS 228 Introduction to Feminist Theory

Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Introduces to the complexity of feminist thought and theorizing through a discussion of many of the major schools of feminist thought and past and present debates within feminist theorizing as it has developed both within the United States, and abroad. A solid grasp of the core theories, their fundamental approaches, their insights into social phenomenon and the key criticisms of each, will allow the student to enter into and participate in the ongoing conversations that characterizes feminist thought. Feminist theory has always developed in tandem with feminist movements and activism. Thus, throughout the course, students will not only learn about feminist theories, but also apply the tenets of different theories to current issues and modern problems. Theories are not meant to be passive ideas unrelated to our everyday reality, but are meant to be used as tools to analyze the world around us. As a critical theory, feminist theory aims not only to produce knowledge, but also to provide a base for action. Feminist theories ask us to rethink what we mean by sex and gender, how we understand our sexuality, the roles, status, and ideals ascribed to men and women in our societies and how we reward and punish individuals that question, challenge or deviate from these roles. Feminist theory engages with issues of social inequality, oppression, and sexism, and invites us to imagine strategies for creating a world where there is more equality and liberation.

WS 234 Women in the Middle East

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Roles of women in Iran, Iraq, and Turkey; women's emancipation movements in these countries; and the impact of Islamic tradition.

WS 238 Women, Work, and Family in the Twentieth Century

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Explores the experience of women of different race, class, and ethnic groups regarding changes in women's responsibilities in the family, participation in the labor force, and the development of new family forms. Illuminates contemporary issues regarding work, marriage, and family from a historical perspective.
WS 247 Women in Latin America

Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM

Women's political mobilization and its effects in Latin American countries. Explores how women in Latin America and the Caribbean have participated in the national movements, revolutions, rebellions, and social movements that have dominated Latin America's political, social, and economic development. Readings cover the incredible variety of women's participation by examining women's activism across time, space and political position. Women's struggles to improve the quality of their lives and the lives of others are a central component of the course. However, to avoid romanticizing women's activism, the course also discusses women's actions on behalf of political projects designed to uphold the interests of the elite and the status quo. Women in Latin America and the Caribbean, as elsewhere, have complicated lives, have complicated political goals and commitments, and have different access to political, social, and economic power depending upon their position within the class, racial, ethnic, religious, age, and gender hierarchies of their societies. Over the semester, we will analyze why women have been involved in political movements, the effects of women's activism on women's position within these societies, the changing relationship between men and women, contested understandings of gender relations, and the overall impact of these struggles on the Latin American and Caribbean countries.

WS 252 Social History of Women in United States, 1650-1875

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

History of women in the United States, emphasizing the "common woman", family life; industrialization; sex roles and sexuality; history of feminism. Reading involves autobiographies, popular fiction, and other firsthand historical accounts.

WS 254 Women and Image in Fine Arts

Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM

Art is a part of the human civilization and it is influenced by the demands of society. Women always were the important art objects, but in different epochs artists treated them differently. By this difference we can see woman's role and place in the society. Discusses women as art objects and artists.

WS 260 Women's Health: Problems and Practices

Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM

Reviews the health care system in the U.S. and its treatment of women. Content includes a history of health care and the changing definition of "health", the current roles of women in this system, and the intersection of the legal system on women's bodies and women's health. Women in the 1970's and beyond started examining the politics of health care, which exploded into the millennium such as cost containment and restructuring of services through managed care; newer and more expensive technologies; growing consumer dissatisfaction with the current system; and trends towards holistic and alternative care outside of the "mainstream" health care system. Develops an analysis of the current system with a rational plan for improving health care for all women. Addresses the roles that women have played in relation to health and health care, the history of women as healers, the shift to women as patients and consumers, and women as workers, both paid and unpaid, in the system of care.

WS 265 Sexuality and Orientation

Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM

Examines the various constructions of women's sexualities: heterosexual, bisexual, and lesbian. Readings from literature, feminist theory, queer theory, psychology and sociology in order to develop an understanding of how sexuality is constructed. Examines the impact of violence, gender, health, media reproduction, class, and race on women's sexualities.

WS 270 Asian American Studies: Asian American Women Writers

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Introduces students to some basic feminist critical theories, including French, Anglo-American, and "Third World" feminist assumptions and positions. Explores how women writers' and poets' creativity and technical strategies are related to the intersected issues of gender, race, ethnicity, sexuality, and class, through closely examining works by Asian American women.

WS 301 Introduction to Indigenous Women

Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM

Focuses on Native American women, beginning with the creation story and ending with the modern-day role of Haudenosaunee women.

WS 305 Gender and the Custodial State

Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM

Focuses on historical and cross cultural components informing contemporary issues of women's imprisonment. With respect to the contemporary scene, emphasizes the process by which women come to be incarcerated and differentials in treatment of incarcerated women. Examines institutional forces in contemporary corrections generally which may contribute to an understanding of women's imprisonment issues.

WS 308 Images of Women and Men in a Changing World

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Examines the history and development of gender imagery, historically to the current age of globalized mass-mediated images. Examines how mass media has influenced gender representation, socialization, and identity construction, primarily in the United States but also abroad. Examines the ways these representations implicate and are implicated and negotiated by gender, racial, class, ethnic, and religious minorities.

WS 312 Culture and Reproduction

Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM

Explores the meanings and stratification of reproduction in our culture. Examines how culture constructs reproduction including controversial topics such as gay adoption, eugenics, reproductive technologies, teen sexuality and government's role in reproduction. Uses a variety of sources from the fields of public health, epidemiology, feminist criticism and the women's health movement to discover the history and current determinants of women's reproductive health and reproductive rights.

WS 315 Cross-Cultural Study of Women

Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM

Analyzes the evolution and diversity of socially constructed gender differences and hierarchies viewed from comparative international and historical perspectives. The maintenance of gender inequalities in societal institutions, such as education, the family, politics and the economy will be explored. In addition, the course will focus on the prevailing cultural backlash of women and men in America in comparison to other societies. To explain gender differences and hierarchies, the course will consider a range of sociological, and other disciplinary perspectives including biological, psychological, and psychoanalytic. Course objectives will be achieved through lectures, readings, guest lecturers, films, and class discussions.

WS 323 Culture of Biology, Medicine, Gender and Race

Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM

Ideas about "scientifically" established differences between women and men, people of color and whites, gays and straights are prevalent in popular culture. Examines how popular culture makes sense of these differences and how science has been shaped by our culture and likewise, how cultural-biases are reinforced by scientific lines of inquiry.

WS 324 Controlling Reproduction: Reproductive Rights, Policies, Practices, and Technologies

Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM

Explores questions such as: What constitutes women's reproductive lives? How do women's reproductive lives impact gender status in society? How do women's reproductive lives differ by age, race, nationality and sexual preference? Who controls reproduction and the cultural discourse regarding reproduction? What public policies and practices foster or undermine reproductive freedoms? Why are reproductive rights integral to human rights?
WS 330 Global Women’s Voices
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Analyzes the evolution and diversity of socially constructed gender differences and hierarchies viewed from comparative international and historical perspectives. The maintenance of gender inequalities in societal institutions, such as education, the family, politics and the economy will be explored. In addition, the course will focus on the prevailing cultural backlash of women and men in America in comparison to other societies. To explain gender differences and hierarchies, the course will consider a range of sociological, and other disciplinary perspectives including biological, psychological, and psychoanalytic. Course objectives will be achieved through lectures, readings, guest lecturers, films, and class discussions.

WS 335 Women and Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Examination of issues of “difference” such as race, gender, class, and sexuality as imagined and narrated by contemporary women writers of speculative (science) fiction. We hope to interrogate the impact of 20th century resistance/social movements in particular, the civil rights, feminist, lesbian and gay, and human rights movements on women writers who’ve chosen to “write against the box” of prevailing literary expectation. We also hope to consider (1) how women writers of speculative fiction subvert, or resist, the status quo; (2) notions of speculative fiction as “escapist” (meaning, “less serious”) literature; (3) the uses of speculative fiction as blueprints for imagining new social orders. Students will demonstrate knowledge of the distinctive features of contemporary women’s speculative fiction, the impact of specific fiction to larger feminist agendas. Students who successfully complete this course should be able to describe, explain and give examples of concepts and terms such as “the fantastic imagination,” “the politics of possibilities,” and “imagined planets.” Required reading will include works by Octavia Butler, Jewelle Gomez, Nalo Hopkinson, and Ursula K. Le Guin. Whenever appropriate, audio/visual aids may be deployed to enhance our appreciation of written texts.

WS 337 Coming of Age
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Contemporary adult literature has experienced an incredible boom in coming of age texts, especially in the popular memoir genre. What does it mean for girls to come of age in the U.S. and other countries? We will read a variety of adult coming of age texts in order to examine how girls from diverse backgrounds confront the social expectations of gender, race, class, culture, sexuality, and religion that determine their transitions from girlhood to womanhood.

WS 350 Gender Issues in Contemporary Africa
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
How do African women and men construct and reorder their lives on a daily basis? How do they negotiate their positions, ascribed gender roles and identities in familial, communal, and national spheres? What are the salient and socioeconomic and political issues facing them? How do they emerge as agents of social change? Examines current policy frameworks and agendas such as the Millennium Development Goals (MDGs) and public policy responses to poverty, gender inequalities in democratic participation and socioeconomic development. Interrogates human rights issues and the rights of the girl child as they pertain to social practices such as female mutilation and child soldiers. Analyzes the changing dynamics of households due to the combined effects of transnational migration, HIV/AIDS and conflicts and their gender implications. Revisits opportunities for social change in the face of an increased pressure from globalization, environmental degradation, a growing retrenchment of the state, and many threats to human security. Interposing several theoretical lenses and building on an interdisciplinarity approach, this seminar analyzes the agency roles of women and men in particular African countries. The course objects are to inspire analytical and critical thinking in students, to develop research and problem solving skills, and to challenge students to integrate multiple analytic perspectives.

WS 353 Law Interprets Gender: The United States Experience
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Introduces upper-level students to a legal examination of language and issues regarding gender and the law.

WS 356 Social History of Women, 1875-Present
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
The making of women’s lives in modern America: work and family, sexuality and politics, race and class. Lectures and readings in autobiographies and historical fiction.

WS 375 Topics in Women’s Studies
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Topics vary according to faculty/instructors.

WS 376 Special Topics
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Topics vary according to faculty/instructors.

WS 379 Sex: Gender and Popular Culture
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
The advent of television in 1950s America, coupled with technological advances in filmmaking popularized visual culture as a primary means of both naming and interrogating the ways in which we understand the social constructions of race, sex, gender, and sexuality. Feminist perspectives are ways of examining how these social constructions (and expectations) are shaped by popular culture, mainly television programming and films; and how shape our ideas about ourselves and others as “feminine” and “masculine” and “sexual” beings. We discuss texts on and view episodes of popular television shows such as “Sex and the City,” “The I. Word,” “Buffy the Vampire Slayer,” and “Will and Grace.” We also view several short films (as time permits). We consider a number of questions including (1) how does “entertainment” act as a substitute for the transmission of social knowledge; (2) what are the advantages and disadvantages of popular culture in the construction of contemporary American life; (3) how does popular culture define “racialized” bodies?; and (4) how does popular culture impact the consumption of American socio-cultural values, globally? Students will demonstrate knowledge of a broader understanding of the terms “popular culture,” “entertainment,” “women’s television,” and “mediated lives.” Students who successfully complete this course should be able to articulate verbal and written alternative critiques to contemporary popular culture.

WS 381 Special Topics
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Topics vary according to faculty/instructors.

WS 382 Special Topics
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Topics vary according to faculty/instructors.

WS 387 Black Female in Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Literature from African American women writers that explore their themes, images, and roles present in narratives, fiction, poetry, and plays. Our examination also includes selected works by African women.

WS 392 Junior Seminar in Women’s Studies
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Topics will vary according to faculty/instructors.

WS 400 Black Women Writers and the Reimagination of American Culture
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
In the 1970’s, Black women writers established themselves as significant voices within contemporary American letters; marking what became known as “the second renaissance in Black women’s literature.” Since then, the impact of Black women writers has re-shaped the discourse defining Black women’s lives and American culture. This seminar examines creative and critical literature written by major writers of poetry and fiction; illuminating the intersections of race, gender, sexuality, culture and class in the re-imagination of Black women’s identities and American culture.

WS 401 Special Topics
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Topics vary according to faculty/instructors.

WS 402 Special Topics
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Topics vary according to faculty/instructors.
WS 409 Quantitative Methods in Social Research
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduction to basic statistical methods and their application to social science research focusing on gender issues. Students will have the opportunity to learn how to conduct basic statistical analyses and apply them to research topics such as gender and global health, maternal health, gender and global development, and contemporary democratization and women. In addition, students will acquire knowledge of how to extract data from existing databases as well as be guided in the collection of their own empirical data. Two types of statistical analyses will be used to assess samples of data: a broad range of descriptive statistics, and correlation and regression models. This course is a hands-on experience and is held in a computer lab; therefore, students will have a good opportunity to become skilled and experienced in understanding and conducting basic statistical research. This course will also teach students how to interpret published empirical papers that use quantitative research methods. We will be learning applications through the use of the SPSS and ActivStats programs.

WS 414 Contemporary Global and Gender Issues
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
How is globalization (including capitalist economic development) interconnected with gender? Surveys recent debates about global development and gender equality, examining current research in this important field. Assess the impact of forces of global development on gender relations; culture and cultural identity; women vs. men's social, economic, and political opportunities; and maternal health. Using a broad scope of most current theoretical approaches from theoretical frameworks of diffusion, modernization, democracy and development theory, the dependency and the world system theory, and cultural relativism perspective, this course examines current research in several pertinent areas of democratic processes though the lens of gender equality. In particular, the effects of global trends in culture, democracy and capitalist economy, cultural McDonaldization are analyzed in view of gender relations. This is to compare the impact of national politics as it effects the social position and roles of women in comparison to men.

WS 425 Women's Movement, Contesting Identities and Global Change
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Introduces students to the basic concepts and practices of feminist pedagogy. Reviews the intellectual roots of feminist pedagogy and examines the ways in which feminist pedagogy has changed over the past twenty-five years. In addition, we explore the connection between feminist pedagogy and social movements, paying special attention to the way feminist pedagogy addresses issues of class, race, and gender. Since the course intends to be useful in training future teachers, it has a practical component in which students design a small unit for a class and attempt to teach it.

WS 435 History of Working Women
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Traces the changes in women's work in the home, in the family, and in the labor force in the nineteenth and twentieth centuries. Focusing on working class women's experiences in the labor force, we explore the impact of urbanization and industrialization on women in different ethnic and racial communities, their experiences and conflicts with unions, and their contributions to labor struggles.

WS 447 Pedagogy and the Interrogation of Methodology
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Introduces students to the basic concepts and practices of feminist pedagogy. Reviews the intellectual roots of feminist pedagogy and examines the ways in which feminist pedagogy has changed over the past twenty-five years. In addition, we explore the connection between feminist pedagogy and social movements, paying special attention to the way feminist pedagogy addresses issues of class, race, and gender. Since the course intends to be useful in training future teachers, it has a practical component in which students design a small unit for a class and attempt to teach it.

WS 459 Television, Gender and Society
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Traces the rise of commercial television in the United States as a form, which has profoundly impacted upon the representation and social roles of women in the family and the workplace. We assume that television is a major cultural, social, and economic force in American society that has shaped and altered every aspect of our lives, and that as a social force it relies heavily on fixed notions of gender.

WS 464 History of the United States Feminist Movement
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Nineteenth- and twentieth-century feminist and womanist movements; sources of feminism; suffrage; women's clubs; temperament; womanism.

WS 466 Women, Work, and Social Change
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Introduction to the study of women, work and social change in developing countries, focusing not only on women workers in labor intensive manufacturing jobs but also on women engaged in other formal and informal sectors of the global economy. Examination of the many processes that generate and contribute to women's subordination, paying particular attention to the many ways in which women assert their own agency and autonomy, and have power to act on their own behalf. By utilizing a comparative cross-country framework, the class will address the larger issues of the feminization and globalization of poverty via the struggles of working women in relation to economic development and the struggles of women from all walks of life who are trying to effect social and political change in their own communities. The objective of this course is to provide a gendered perspective on work and social change in a localized context and to highlight the importance of women's agency through their experiences of work and living. We will learn how women can take responsibility, can struggle to make a difference, and can improve their own situations.

WS 487 International Organizations, Gender, and Development
Credits: 3
Prerequisites: Recommended - WS 241 or WS 240 or completion of a lower level theory course in another discipline
Corequisites: None
Type: SEM
This seminar provides students critical frameworks of current and emerging theories, paradigms, and approaches on gender, development, and global change from an interdisciplinary perspective. Second, it provides students a forum to analyze and appraise development policies and practices from a gender perspective incorporating economic, social, cultural, and legal aspects of development. Third, it offers the opportunity to link theory and practice, as well as revisit the actual ‘practice’ of development through policy analysis, discursive analysis of development policies, project appraisal, critical assessment of international organizations agendas, and forms of resistance to globalization. This seminar emphasizes students’ active participation and leadership in discussions and interactive scholarly groups. Students will gain exposure to the politics and economics of gender and development, the changing institutions and new context of development, and the mediating influence of international organizations such as the World Bank and the UN, to critically analyze and formulate strategies and actions plans for social change from a gender perspective.
WS 490 Senior Thesis
Credits: 3
Prerequisites: None
Corequisites: None
Type: TUT
Provides majors with the opportunity to develop a research paper that addresses the foundational intersecting discourses within the discipline: race, gender, sexuality, class/material condition, culture, language, and other indices of difference. The research paper (generally 30-50 pages in length) should reflect these larger discourses through the lens of a more specific topic. Required for majors only and consists of two sequential semesters of work in the student's senior year.

WS 494 Senior Capstone Course
Credits: 3
Prerequisites: Completion of year 1-3 major requirements.
Corequisites: None
Type: SEM
Course for senior-level majors intended to provide a learning experience that integrates knowledge from lower-level courses. The course is designed to provide an opportunity for seniors to put into practice theories and concepts developed in their coursework. Topics may vary.

WS 496 Women’s Studies Internship
Credits: 1
Prerequisites: None
Corequisites: None
Type: TUT
Hands-on experience in the field. Provides an opportunity for majors to put into practice feminist theories and concepts developed in their coursework. In addition to valuable experiential learning, an internship can be used as the first step towards a career, an excellent addition to a resume, and a source for job contacts and future references. Internships are available, for example, at Planned Parenthood, Erie County Commission of the Status of Women, Everywoman Opportunity Center, Inc., or in an area of the student's major concentration and interest. Department registration required. Permission of the internship and advisor required.

WS 497 Departmental Honors Thesis or Project
Credits: 3
Prerequisites: None
Corequisites: None
Type: TUT
The student and the faculty member agree to regular meetings during which they discuss the student's writing and progress toward completion of a specialized thesis or project. The student should expect to receive critical comments from the faculty member on her/his writing. The final product should be worthy of the designation of a thesis or project.

WS 498 Undergraduate Research and Creative Activity
Credits: 3
Prerequisites: Permission of Instructor
Corequisites: None
Type: TUT
Students collaborate with faculty research mentors on an ongoing project in a faculty members’ laboratory or conduct independent research under the guidance of a faculty member. This experience provides students with an inquiry-based learning opportunity and engages them as active learners in a research setting. Students will choose someone whose area of expertise is most suited to the student’s interests, and student should discuss the possibility of working together prior to the semester.

WS 499 Independent Study
Credits: 1
Prerequisites: department registration and permission of instructor
Corequisites: None
Type: TUT
Individualized student work under the guidance of a faculty member, intended to pursue topics not ordinarily offered through regular coursework. Individualized student work under the guidance of a faculty member, intended to pursue topics not ordinarily offered through regular coursework.

History
WS 102 Survey of Greek History
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
An introduction to the history of ancient Greece from Mycenaean Period to Alexander the Great, with emphasis on social organization, political and judicial institutions, religious organizations, and civic identity. Readings will include selections from the Greek historians, (Herodotus, Thucydides, Xenophon, and Plutarch), Greek drama, the Greek orators, and philosophers, and inscriptions recording decrees, laws and treaties. Major archaeological evidence will be presented and students will write 2 exams (midterm and final) and one short paper.

WS 113 Myth & Religion in the Ancient World
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
An investigation of the mythic and religious traditions of the ancient Greeks and Romans. The Greco-Roman traditions are examined in comparison with those of other ancient Indo-European peoples, especially the Hittites, Indians, Persians, Celts and Vikings. Cross-listed with CL 113 & RSP 113. EAR

WS 151 Western Civilization I
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Western civilization from its beginnings to 1715.

WS 152 Western Civilization II
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Western civilization from 1715 through the twentieth century.

WS 161 United States History I
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
U.S. history from Native American settlement to the end of the Civil War.

WS 162 United States History II
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
U.S. history from Reconstruction to the present.

WS 182 Asian Civilization II
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduction to major themes and events in the histories of China and Japan, the Indian subcontinent and Southeast Asia in modern times. Considers the impacts of colonialism and imperialism, the emergence of nationalist and revolutionary movements, decolonization and the Cold War. Our goal is to understand the historical forces and transformations shaping contemporary Asia, the common experiences that different areas of Asia have shared in the modern era, and what distinguishes the histories of particular Asian nations within a comparative perspective.
HIS 203 Greek Civilization
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Elements of Greek civilization analyzed from synchronistic and developmental views to produce a coherent image of that culture as a living and expanding entity. Cross-listed with CL 222.

HIS 205 Ancient Near East & Egypt
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
This is a topical survey of the contribution of ancient Near Eastern and Egyptian cultures to Western History and thought, from the 'invention' of writing to the fall of the Assyrian Empire. After a discussion of the origins of what civilization is in the context of the urbanization of Egypt and Mesopotamia, we will then continue on to study the nature of kingship, religion (including church vs. State issues, approaches to divinity), trade and economy, and the development and pursuit of empire. There is a short, summarizing textbook and collateral readings of original documents in translation. Several videos and access to WEB-based tools will be made available for the course. Assignments include a mid-term, final, and a short paper on an approved topic.

HIS 206 Contemporary Poland and Central Europe
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces students to the main issues of contemporary Polish and Central European politics as well as social, cultural and economic life. Focuses on developments affecting post-communist Europe after 1989. The experiences of Poland, the Czech and Slovak Republics and Hungary's transition to liberal democracy and a market economy are examined and compared to the post-Soviet experiences of Russia and other Eastern European societies (Ukraine and Byelorussia). The course will identify both positive and negative aspects of the transformations after the fall of communism, discussing such issues as the social and economic consequences of market oriented reforms; the development of civil society; the heritage of the old system; nationalistic, xenophobic and populist tendencies; and commercialization and westernization (as well as Americanization) of life. The role of the accession to the European Union in 2004 with its profound consequences will be thoroughly examined. We will also discuss the present dilemmas of Polish and Central European politics, the future of the European integration (European federation vs. Europe of homelands), relations with Russia and the US, and the direction of further internal reforms.

HIS 209 The American Civil War
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduction in to the causes of the American Civil War, its impact on the American nation, and its continued significance for American politics and society. Topics covered include: the role of slavery in antebellum politics and the crisis of the 1850s, army life, the changing nature of warfare and introduction of "total war" tactics, changes in gender roles and women's political activism, Abraham Lincoln and his assassination, slave emancipation, Reconstruction, and the memorialization of the war from the nineteenth century to the present day. We will read a variety of primary and secondary source documents, as well as literary treatments of the period and films, in order to obtain a fuller cultural understanding of this pivotal moment in American history.

HIS 210 Women of the Ancient World
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
This course will introduce the student to the life of women in the ancient Greek and Roman world. The role of women will be investigated through primary sources - written, archaeological, and visual. By analyzing this evidence we will also study the legal, economic, religious, and social status of women in the ancient world. In addition, the students will be exposed to the ancient and modern scholarship concerning attitudes towards women. Cross-listed with CL 210.

HIS 213 African History 1800-Now
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
The second of two introductory surveys of African history offered by the Department of History. In this course, we focus on African history in the nineteenth and twentieth centuries. The course covers the increasing encroachment on African by European colonialism and the historical responses of Africans to colonial rule. Among the larger themes that the course will focus on are the responses of African societies to the ending of the trans-Atlantic slave trade, Islamic reform and activism in the nineteenth century, colonial political economies, religious change, labor mobilization and migration, urbanization, African political mobilization, and anti-colonial nationalism. The course will also consider some of the historical outcomes in post-colonial Africa.

HIS 215 Death in America
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
This course examines death in America from before Columbus until today. Through lectures, movies, music, slides, and the World Wide Web, we will investigate how people have thought about death throughout American history. Because people have always been fascinated with death, they left behind numerous sources that allow us access to their innermost thoughts: diaries, letters, gravestones, songs and artwork. We will examine these sources to learn how attitudes towards death and dying have changed over the last several centuries. Topics include Indian burial practices, Puritan death, the problem of infant morality, the meaning of death in the Civil War, capital punishment today, and physician-assisted suicide.

HIS 216 Crime and Punishment in America
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
In colonial America, practicing witchcraft was against the law. Beating your wife was not. Convicted wrongdoers faced hanging, flogging, even branding - but not prison. There has always been crime and punishment in America, but just what counts as crime, which crimes are committed, which are especially dreaded, how criminals are prosecuted, who they are and what kinds of penalties they face has changed from century to century.

HIS 217 Eastern Europe, 1880-1991
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
History of Eastern Europe, including Poland, Czechoslovakia, Hungary, Romania, Bulgaria, and Albania, during the late 19th and 20th centuries.

HIS 218 Twentieth-Century Europe and the World
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
History of Europe combined with an account of the changing relationships between Europe and the rest of the world from the heyday of imperialism to the present.

HIS 221 Twentieth-Century Europe
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
The determinations of the postwar period, often a violent process, defined colonialism primarily in political and economic terms. Recently, the analysis has shifted to understanding empire as a cultural phenomenon-to understanding it, that is, as a system of thought that enabled the political and economic view of colonialism. Recent analysis also stresses that colonialism had cultural repercussions both for the colonial authorities and for the colonized. This course applies these insights as it explores three phases of European imperialism. We begin by looking at the Spanish empire in the New World and at the expansion of trade and the gradual accumulation of outposts in the seventeenth and eighteenth centuries. The emphasis then shifts to the study of nineteenth-century colonialism. The first example will be India: how the British came to control and administer this part of the world. Then, we shall examine the transfer of this model of colonial administration to Africa in the late nineteenth-century, examining, at that point, French, German, as well as British versions of empire.

HIS 222 Judaism in Medieval Times
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
An in depth study of critical topics in Jewish history and culture from the Arab conquest of the Middle East and North Africa until the French Revolution. Topics discussed will be: Medieval Biblical Exegesis, the Koran, the Golden Age in Spain, Crusades, the Inquisitions, Mysticism, Messianism, Pietism, the Ghetto, Scholasticism, Secularism and the French Revolution. Cross-listed with RSP 229, JDS 229.

HIS 223 Crisis in Jewish History
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Six issues in Jewish history and their impact on the development of Judaism and on the Jewish community; analysis of the resilience and adaptability of a people under stress. Cross-listed with JDS 102.

HIS 227 Twentieth-Century Europe and the World
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
A survey of the Origins of the State of Israel to the present day. The development of the Zionist Idea and its implementations. Israel and its historic purpose as a center of religious and political hope. Primarily social and political history.
HIS 238 Mass Media and Foreign Policy
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines the influence of the mass media on the formulation and implementation of US foreign policy from the Cuban Revolution in 1959 to the US war with Iraq in 1991. Analysis covers major newspapers and magazines, television news, PBS documentaries and the films: "Salvador" (Oliver Stone) and "Missing" (Costa Gavras). Beginning with classes about the Fairness Doctrine, changes in the media since World War II and the media's role in domestic politics, the course uses case studies of Castro's revolution, the Vietnam War, Israel and Lebanon (1982), the 1980s crisis in Central America, the October surprise, Iran-Contra and finally Desert Storm to help the student develop and apply critical skills to the analysis of print media, TV news and film. The major focus of this course will be on the presidential terms of Ronald Reagan (1980-1988).

HIS 241 Sexuality in America
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
What does sexuality have to do with American history or politics? In "Sexuality in America" we explore the topics of sex--sexual behavior, sexual morality, sexual identity, and sexual experience by placing them in historical context and tracing changes over time in the ways Americans have understood and tried to regulate sexuality. We question to what extent sexuality is natural/biological or cultural/social. To understand sexuality as having a history, we will investigate three areas within American society: First, we will look at views of sexuality within major belief systems like religion, science, and the law. Second, we will trace changing sexual beliefs and practices in everyday life, examining sex as an ordinary part of family and community life. Finally, we will look at sexuality when it becomes an explicit part of American political life, as it did in the 19th-century temperance movement, the early 20th century birth control movement, the post-Stonewall (1969) gay and lesbian movement, and today's anti-abortion movement.

HIS 248 War in the Ancient Mediterranean World
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Warfare has been a constant feature of societies and civilizations. It both destabilizes and stabilizes the order of things. All the dualities of human nature are intimately bound up with and played out in warfare. However we feel about them, wars past and present, perhaps more than any other single factor, have shaped the world we live in. This course is designed to provide a historically anchored survey of warfare in the ancient Mediterranean civilizations, particularly those of Greece and Rome.

HIS 249 Social History of Sport and Recreation
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
The main aim of the course is to develop an understanding of the history of sport and recreation, not as isolated activities but in their social contexts; i.e., as they are influenced by, and themselves influence, other aspects of society, including the social, political and economic aspects of culture. Topics which will be explored include, but are not limited to, examinations of: the role of sport in relation to the growth of industrialization and nationalism in the nineteenth century; the role of race, gender, class, and sexuality as determining factors in the evolution of national sporting traditions, the connections between the international aspects of sport and Western dominance in the global marketplace, and finally, the relationship between sport and notions of civilization, masculinity, and femininity. The predominant focus will be on examples drawn from the Anglophone world of the United States, United Kingdom and the former British Empire.

HIS 250 History of Ireland
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
This course is an introduction to the history and historiography of Ireland from the seventeenth century to the present, with an emphasis on Ireland's social, cultural and political history from the Cromwellian invasion to the Good Friday Peace accords. While the past is important to most modern cultures, it is particularly central to modern Irish society. The past (or various interpretations of the past) is so often used as ammunition in the on-going battle over the relationship between the Republic of Ireland, Great Britain and Northern Ireland. The goal of the class will be to untangle the intertwined threads of history, legend, propaganda, and folklore which comprise the Irish vision of the past. Topics covered include: the 1798 United Irishmen's Rebellion, the creation of the United Kingdom of Great Britain and Ireland, Catholic Emancipation, the Great Famine/An Gorta Mor, the Gaelic Renaissance, the Home Rule movement, the Troubles, the Irish Diaspora, and the roles of the religion, sport, music, drama and literature in the creation of the Irish nation.

HIS 255 Nationalism and Democracy
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
What was the "long nineteenth century" in Europe, and why should we study it today? This course traces the radical transformation of Europe from a traditional agrarian society with vast poor and illiterate regions in 1789 to the industrialized continent that plunged the world into war in 1914.

HIS 289 Pearl Harbor: Japan Goes to War
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
The circumstances in the 1920s and 1930s that eventuated in Japan's violent confrontation with the U.S. and other nations, the Pacific War, and Japan's postwar adjustment to defeat.

HIS 295 Special Topics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Content varies by semester.

HIS 299 The Holocaust and History
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
How did the Holocaust happen? What groups were swept up in its path? How have victims, perpetrators, and bystanders written and re-written the accounts of what happened? And how do we remember this today? This course places the Holocaust in the broad context of European history. We examine cultural, political, and social developments during this period by reading first-hand accounts, novels, and some classic texts such as Art Spiegelman's Maus, Victor Klemperer's I Will Bear Witness, and Ian Kershaw's The Hitler Myth. We will also view selected films, among them Triumph of the Will and Shoah.

HIS 300 The Age of Exploration
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Bridges the Atlantic by examining European exploration and the founding of European colonies in North and South America, 1400-1800.

HIS 301 History of Roman Empire
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Surveys the span of Roman history from the formation of the imperial system of government, the Principate, in 27 BCE under Octavian (aka Augustus, the August One), to the death of Constantine in 337 CE. We will explore several aspects of the Roman world—political, familial, cultural, social, economic, artistic, architectural, military, etc.—and we will draw on the writings of the Romans themselves and modern scholars, as well as on archaeological sources. Some attention will be given as well to subsequent 'afterlives' of the Roman Empire, from Byzantium to Caesars Palace in Las Vegas.
**HIS 302 Latin American Colonial History**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
A survey of the conquest and colonization of Latin America from Pre-Columbian civilizations through independence in the early nineteenth century; this course focuses on the creation of new societies in the Americas, shaped by the interaction of Europeans, Indians, and Africans. We will concentrate on the three great poles of colonial development in the New World-central Mexico, highland Peru, and coastal Brazil but our inquiry will also include the Caribbean and other regions. Emphasis is on social and cultural history, including such topics as popular religion, native labor systems, slavery and the slave trade, race relations, marriage and the family, and the challenges of daily life.

**HIS 303 U.S. Constitution: Its Origins and Early Development**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Themes include: (1) the creation of the United States Constitution, emphasizing the transplantation and transformation of English institutions in the period before 1787 and on the immediate ideological, social, and economic background of the Constitution during the years 1776-1787; (2) the adoption of the Bill of Rights, including the creation of a national judiciary system, the setting of early precedents, and the meaning of Freedom of the press in the years immediately following the Constitution's adoption. We also confront the relationship of the Constitution to the development of political parties and how these parties in turn effected the operation of the Constitution. 3) The impact of John Marshall and the Supreme Court, including the major issues confronting the Court: judicial review, federal-state relations and the development of a legal framework for the growth of a national economy as well as the development of slavery as a constitutional question and the relationship of this issue to the coming of the Civil War.

**HIS 304 Race & the Law**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Our purpose in this course will be to explore that part of U.S. law that has dealt with the human and civil rights of African Americans (and by implication other racial/ethnic groups in U.S. society: Asian Americans, Hispanic Americans, Native Americans, etc.) We will do this by examining the relevant parts of U.S. constitutional law as they have evolved through the dialectical interplay of Congressional legislation and U.S. Supreme Court decisions. However, where appropriate, decisions of the Executive branch made under various Executive Orders will also be considered. The principal theme of this course will be that any understanding and appreciation of U.S. constitutional democracy requires us to acknowledge the powerful role of race in the evolution of this democracy. Consequently, regardless of what time period - from the past to the present - is under consideration, the lives of all in the U.S. (of whatever color and sex) have been touched by the interaction between law and race. Two main parts: in PART ONE we will concentrate on an area of legal studies called 'Critical Race Theory', where our concern will be to explore the interaction of law and race from the perspective of issues such as culture, history, gender, identity politics, class, the media, etc. In PART TWO we will examine the interaction between race and law from the perspective of the historical evolution of democracy in the U.S.

**HIS 305 Modern Spain, Italy, and Portugal**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Examination of the dynamics of nationalism, imperialism, revolutionary ideology, and three variants of right-wing dictatorship in Southwestern Europe in the 19th and 20th centuries.

**HIS 306 Special Topics**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Subject matter determined by instructor.

**HIS 307 History of Paris**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
The objectives of the course are to provide students with insights both into European urbanization and the specific development and cultural importance of Paris. The course covers four different time periods: the Middle Ages, the eighteenth century, the second half of the nineteenth century (from Haussmanization during the Second Empire to the 1889 World’s Fair and the Eiffel Tower), ending with the post-WWII influx of Americans, known as 'The Lost Generation'. The main test for the course will be Colin Jones’ History of Paris. Students are encouraged to write a research paper on an American in Paris from a list of important visitors.

**HIS 308 Special Topics**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Subject matter determined by instructor.

**HIS 309 Great Decisions I**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  

**HIS 310 Archaeology of Assyria**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
The course objectives are to trace the history and development of the culture of the ancient Assyrians; to help students see how individual strains of different cultures-the variegated peoples that make up the ancestry and contemporaries of the historical Assyrians-can be reworked by these ancient people to create (or force the creation of) a sense of common heritage; to introduce the specific character of the Assyrian Palace and its bureaucracy; to improve student skills in the analysis of both the written text and the visual record of an ancient culture for the purpose of writing history.

**HIS 311 The Age of Jefferson**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
U.S. history during the era of the Jeffersonian administrations, 1801-1829.

**HIS 312 The United States in the Age of Jackson, 1815-1837**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
The course details developments in America between 1815 and 1837. Stress will be placed on political, economic, and social developments. The major problems emphasized are: the results of the War of 1812, the development of the West, the impact of the transportation revolution, the origins of the Jacksonian movement, Jacksonian democracy, social reform, and the development of slavery as a political issue.

**HIS 313 20th Century Europe**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
This course is designed to present a survey of major political, cultural, and social developments in Europe during the 20th century. In the first half of the semester, the course examines the concept of “modernity” and the rise of mass society. We look at the causes and the experience of the two world wars in Europe, analyze the rise of totalitarian ideologies and dictatorial states, and include the Holocaust. In the second half of the semester, we deal with the division of the European continent under the conditions of the Cold War, and examine the new cultural and intellectual dynamics within European society after 1960. Finally, this course will address the collapse of the Cold War order and the birth of new nation-states in Europe around 1990. Visual materials play a prominent role throughout the semester.

**HIS 314 Ancient African Civilizations**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
An intensive examination of man and society in ancient Africa, stretching back to the evolution of mankind and including an analysis of early forms of African state formations. Ancient Africa will include the following themes: (1) prehistoric ancient Africa; (2) the desiccation of the Sahara and its consequences; (3) African and Mediterranean civilizations; (4) Christianity and Islam in ancient Africa; (5) Africa’s ancient state formations; (6) the Bantu migration hypothesis; (7) the mystery of the Great Zimbabwe; (8) the international slave trade and Africa’s misfortunes. All of these will lead to an examination of the dynamics of civilizations in ancient Africa, including their failed forms, using Arnold Toynbee’s perspectives on the rise and fall of civilization as a theoretical point of departure.
HIS 315 German Culture and Society, 1789-1989

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
German history from Bismarck to the unified Germany of today.

HIS 316 Early Modern Europe

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
This course serves as an introduction to European history from approximately 1400-1789, using several key themes. Many dramatic transformations—religious, political, economic, social, intellectual—played a role creating the modern world. This course examines transformations central to the development of the modern and encourages seeing the familiar elements brought about by these changes. This class also strives to show the complexity of this period, including the instability and uncertainty of the changes. Many things about the Early Modern are unfamiliar to us, and in many ways it is an alien culture. Early Modern Europe has a dual nature, and the readings of this course should be a tug-of-war between the familiar and odd; it should be recognizable and strangely distant at the same time. Ultimately, this course proposes that the birth of the modern world, as we know it, was not the only path, and the Early modern period offered many possibilities.

HIS 317 Tudor England

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
England, under the ruling Tudor family, underwent significant political, social, economic, and religious and cultural change. We will read recent scholarly works on England between 1485 and 1603 and analyze key primary sources drawn from the period, including parochial and state records, literature, art, and music. Themes will be drawn from among the following: the monarchy and changes in the state, religion and the Reformation, social change, gender and the family, and early empire and exploration.

HIS 318 Stuart England

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
England’s century of revolution as seen through the eyes of the principal combatants.

HIS 319 Europe Between the World Wars, 1919-1939

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
This is an advanced level undergraduate survey of World history between World War I and World War II. Students will be introduced to interwar history as the great period of crisis in contemporary history. This concept will be considered from diverse perspectives, including the changing dynamics of international relations, rapid social and cultural transformations, and the radical new politics ushered in by World War I and its aftermath. The course will focus on the major conflicts of the period, particularly those resulting from World War I and leading to World War II. Considerable attention will be given to the formation of the Soviet Union; the formation of the modern Middle East; the revolutionary civil wars in Spain, China, and elsewhere; the crisis of liberal democracies; and the rise of an age of dictatorship across much of the globe.

HIS 320 British History, 1668-1848

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
The structure of aristocratic society and the impact of industrialization upon that society.

HIS 321 Victorian History, 1832-1901

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
In 1851, when the Great Exhibition opened in the new Crystal Palace in London, Britain’s position as the pre-eminent power in the world seemed untroubled. The Crystal Palace was a massive glass structure that covered almost nineteen acres of ground and showcased some of the most spectacular examples of British ingenuity produced by a century of industrial growth in canals, railways, and factories. HIS 321 will look at both the self-congratulatory and hopeful world of Great Britain and the British empire during the reign of Queen Victoria as well as the underside of that world that included new depths of Dickensian poverty, famine in Ireland and the grisly East End of Jack the Ripper. We will explore a range of themes, including: urbanization, class tensions, industrial change, imperialism, gender, socialism, rural nostalgia. In particular, the class will chart the rise of industrial wealth, the problems of urbanization, the expansion of the British empire, and the development of an interventionist state.

HIS 322 Latin America: Culture and History

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
The leaders of the newly independent Latin American nations faced a multitude of problems. Geography, culture, economics, and political rivalries doomed most Latin nations to chaos and economic underdevelopment. The first part of this class will focus on the colonial legacy and nineteenth century frustration. The class will examine two unique attempts to grapple with those problems in Haiti and Paraguay. The next two sections will cover failed attempts at reform in Chile, Argentina, and Uruguay and then study equally futile revolutions in Mexico, Cuba, Bolivia, and Nicaragua. The fourth section of the course will focus on current problems, including drugs, debt, immigration, and the looming pressure of the United States.

HIS 325 Twentieth-Century Britain, 1901-1974

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
This class will examine the dramatic transformation of Great Britain from world power in 1900 to a reluctant partner in the European Union in 2000. Topics to be covered include: the world wars, Britain’s relationship to Ireland, decolonization and the growth of the Commonwealth, the rise of the welfare state, Thatcherism, British pop culture, the changing demographic face of the UK, and British politics from Salisbury to Blair. Readings will include fiction and non-fiction and the class will use film and musical evidence to explore Britain’s changing place in the world.

HIS 326 Ancien Regime

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Social, political, economic, and diplomatic history of the Old Regime in Europe and France, 1715-1789.

HIS 327 Modern Cities

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
This course serves as an introduction to the history of modern cities in Europe and North America during the nineteenth and twentieth centuries. Proceeding chronologically, we will look at a range of cities including Paris, New York, Chicago, Berlin, and Buffalo to investigate their particular histories and to compare and contrast them with the historical developments of other cities. The objective of this class is to introduce students not only to the specific histories of different cities, but to provide an overview of urban history and the range of subjects urban historians study.

HIS 328 History of Brazil

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Examines major topics in Brazilian History, including the conquest of Amerindians, the consolidation of Portuguese colonial society, the role of slavery and abolition, the interplay of political independence and economic independence, and the contest between authoritarian rule and democracy. Considers Brazilian women’s lives, race and ethnic relations, environmental controversies, and the cultural expressions of religion, music, and sport - all in historical perspective. Covers five centuries of social change, from the arrival of European colonists to the recent past.

HIS 329 US History Since WWII

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
A survey of modern United States history from WWII to the millennium that examines popular culture, social movements, foreign and domestic politics, and economic developments.

HIS 330 Race, Religion, and Sex in Early Modern Europe

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
We use modern categories of race, ethnicity, and gender to understand diversity in contemporary society. But how did people living between 1400 and 1800 understand differences? We will study how early modern Europeans used race, religion, the biological differences between men and women, and sexuality to write about or define differences among people.
HIS 331 Special Topics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Subject matter determined by instructor.

HIS 334 Islam/Muslim in Modern Southeast Asia
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
India, Pakistan and Bangladesh together have the largest population of Muslims in the world. The course provides an introduction to the history of Muslim communities in modern South Asia: their re-definitions in the modern period and their role in forming new nation-states in the twentieth century. We will read primary sources - political speeches, newspaper reports, diaries, fiction, poetry, film and music - and also acquaint ourselves with South Asian Muslim cultures. No prior knowledge of South Asia is expected.

HIS 335 Culture, Memory and the Uses of the Past
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
History is not something that simply happened but is produced, crafted and contested in different ways throughout the world. Such variety reflects different methods of recording and remembering the past, and different ways of organizing the past to make it culturally sensible. This course explores how the past is utilized toward a range of aims that make it capable of speaking to what matters in the present. Our examination will extend from state archives and other written sources such as letters and diaries, to monuments, photographs and paths through the forest. Each source reflects different notions of a usable past, and different cultural and political reasons why a particular past is worth remembering. At every stage of the course we will ask how the past matters, we will examine the ways it is represented, and we will probe how claims about it imply different stakes and satisfy different ends.

HIS 337 Intellectual History of Europe
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
An introduction to the intellectual history of Europe since the Enlightenment studied through analysis and important documents of philosophy, political and social theory, literature and art. A central focus of this course will be the consciousness of a crisis of modern society and culture that permeated broad sections of nineteenth and twentieth century thought. The course begins with an examination of the humanistic values of the Enlightenment, traces their fate in the nineteenth and twentieth centuries, and concludes with the question of their survival in our time.

HIS 338 Special Topics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Subject matter determined by instructor.

HIS 339 Pearl Harbor: Japan Goes to War
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
The course will probe the historical circumstances in the decades of the 1920s and the 1930s which led Japan into war first on the Asian continent and then with the United States. Common assumptions about Japan’s diplomatic and military aims will be critically reviewed, through analysis of Japanese documents of the time, in English translation. Students will learn how the United States and its allies tried to remodel Japanese thought and society after the war. The course will also deal with postwar judgments on Japanese policy and actions, voiced in war crimes trials and the memories of Chinese and Korean victims of the war.

HIS 340 Topics in German History
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Varying topics in German history, as chosen by the professor.

HIS 341 Social History of Women in the United States
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
This course will examine the history of women in colonial America and the U.S. through the 19th century. We will concentrate on social history, looking at how women of different races, ethnicities, classes, regions and ages experienced and shaped their daily lives under the constraints of a given era. Themes will include work, family relations, slavery, childbirth and motherhood, sexuality, and popular culture. We will also look at political issues, including changing notions of patriarchy, women’s legal status, the meaning of the American revolution for women, and women’s political activism in the abolition, temperance, and women’s rights movements. The central questions will be: How can we understand these issues historically; and what relevance do they hold for more recent history and our own time.

HIS 342 History of Modern South Asia
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
India, Pakistan and Bangladesh together have the largest population of Muslims in the world. The course provides an introduction to the history of Muslim communities in modern South Asia: their re-definitions in the modern period and their role in forming new nation-states in the twentieth century. We will read primary sources - political speeches, newspaper reports, diaries, fiction, poetry, film and music - and also acquaint ourselves with South Asian Muslim cultures. No prior knowledge of South Asia is expected.

HIS 343 19th Century Europe
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
This course is a survey on European history between the French Revolution in 1789 and the First World War. It covers the major political, social, and cultural developments of this “long nineteenth century.” The course addresses the emergence of revolutionary and national movements as well as the re-composition of the European map through wars and state-building. It will pay equal attention to the fundamental transformations of society through industrialization, urbanization, and the emergence of a mass public. Cultural and ideological aspects include the rise of modern science, the changing role of religion, and the main ideologies of the century: nationalism, liberalism, socialism, and imperialism.

HIS 344 American Dissenters
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
American Dissenters uses biography and autobiography, as well as fiction and histories, to analyze the development of lives, movements, and ideologies in American history that challenged mainstream culture, politics, and attitudes. We are most concerned with two problems: the nature of commitment to a frequently unpopular course of action; and the ways in which people choose to explain their motives, fears, and aspirations. Politics as such is of less concern to the work of the course than the study of what motivates people to stand against the main currents of the times in which they live. Among the lives we may study are the following individuals: Karen Silkwood; Lenny Bruce; Joe Hill; Mother Jones; Emma Goldman; Agnes Smedley; Jack Kerouac; and Allen Ginsburg. Among the problems we will discuss are the limits of free speech and the moral dilemmas of whistleblowers.

HIS 352 The American Revolution
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
The American Revolution from the initial tensions between Great Britain and its North American colonies through the ratification of the Constitution and the adoption of the Bill of Rights.

HIS 354 American Transition, 1877-1901
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Social, economic, and political transformation of the U.S. during the last decades of the nineteenth century.

HIS 355 U.S. Foreign Relations, 1914-Present
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
An advanced survey of American diplomatic relations in the 20th century.
HIS 356 Social History of Women in the U.S., 1875-Present
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
This course will survey the social, cultural, and institutional history of women in the United States, including gender, class, and race.

HIS 357 History of Medicine
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
This course will survey the social, cultural, and institutional history of medicine in the West, with particular emphasis on the late Middle Ages to the twentieth century. Topics will include: medical theory and practice; the medical and “health-care” professions; hospitals; clinical medicine; the impact of disease on individuals, families, society, and history; the changing experience and meaning of illness; the changing nature of the physician-patient relationship; medical conceptions of race and gender and their historical consequences; colonialism and medicine; and the social and cultural construction of disease, sexuality, and the body.

HIS 358 Renaissance
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
This class will examine women as political activists, women in popular culture, and women's diverse experiences of work, family and sexuality. We will compare late 19th century women's reform movements, culminating in the successful drive for women's suffrage in the 1910s, to the second wave feminist movement spawned in the 1960s and 1970s. We will also explore popular culture as a realm of performance and a powerful site for the creation of female images and ideals. Finally, we will examine birth control, abortion, sexual danger and sexual pleasure as important personal as well as political issues in women's lives. How much have women's lives changed since the 19th century? Have women of varied ages, racial/ethnic communities, and social class been empowered by these changes? How do we assess or measure social change, power, and gender hierarchy?

HIS 359 Reformation
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
This course explores the causes and development of the division of western Christianity into Protestant and Catholic communities. Following a general survey of social and religious tensions in the late Middle Ages, attention will be given to the contexts and political trends in fifteenth century Europe leading to the so-called “magisterial Reformation” under Luther and Calvin. The religious ideologies of the reformers will be examined against the background of Renaissance culture and developing ideas of the nation-state, the rediscovery and transformation of classical learning, the development of literary and historical criticism, the growth of populism and the power of the laity in the Radical Reformation, and the beginnings of anti-Trinitarian ideas among the Socinians. Some attention will be given to the conciliar and theological efforts to contain the Catholic Church, and to the dispersion of Reformation political ideals and theology to the New World, with special reference to New England.

HIS 360 American Cultural History I
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
This class covers Mexican history from the Revolution of 1910 and the roles played by Pancho Villa, Alvaro Obregon and Emiliano Zapata. The course will end with classes on contemporary problems such as drugs, crime, immigration to the United States, as well as the methods of slave resistance. The student will be exposed to relevant primary source documents and will be asked to assess and analyze these sources in light of the larger issues in the course. In addition, the student will be exposed to some of the major debates in African American history and will be encouraged to form opinions and convictions on these major issues. The course is interactive and will include sources from the lived experience of African Americans including songs, folklore, and visual culture.

HIS 361 American Cultural History II
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
This class covers Mexican history from 1877 to the present. Emphasis will be on the years 1878-1940. We will analyze the story of Germany's first attempt at democracy between World War I and the rise of Nazism.

HIS 362 American Cultural History III
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
This course examines the social, cultural, and historical development of particular notions of race in the United States, primarily in the eighteenth and nineteenth centuries. We will study the changing social organization and cultural meaning of same-sex relations in the United States, primarily in the nineteenth and twentieth centuries.

HIS 366 History of Sexual Subcultures in America
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
This course analyzes the history of African-Americans to 1877. We are interested in a number of themes including the trans-Atlantic slave trade, the development of particular notions of race in the United States, as well as the methods of slave resistance. The student will be exposed to relevant primary source documents and will be asked to assess and analyze these sources in light of the larger issues in the course. In addition, the student will be exposed to some of the major debates in African American history and will be encouraged to form opinions and convictions on these major issues. The course is interactive and will include sources from the lived experience of African Americans including songs, folklore, and visual culture.

HIS 376 African-American History, 1877 to Present
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
This course analyzes the history of African-Americans from 1877 to present. It addresses a number of themes including the experiences of freed persons during the period immediately following slavery, the legal and socio-economic development of racial segregation and discrimination, along with the persistent and varied forms of resistance that African Americans engaged in as avenues of redress. The course also treats the arts and discusses the development of black vernacular arts during the period, linking, for example, the rise of musical forms such as blues and jazz to the Harlem Renaissance and the Black Arts Movement.
HIS 380 England in the Late Middle Ages
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Monarchical decline and revival during the era of the Black Death, Hundred Years’ War, and disintegration of the medieval ideal.

HIS 382 American Religious History
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
This course is an introduction to religion in America from the Puritans in the early seventeenth century to Protestant evangelicals in the late twentieth.

HIS 383 War & State: European Foundations
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
It has often been said that: “war is the continuation of politics with other means.” What exactly does this statement express? How have wars figured into the rise and fall of modern nation states? This lecture course examines how warfare affected the power relations in nineteenth and twentieth-century Europe. Looking at a range of military conflicts including the Napoleonic Wars, the Franco-Prussian War, World Wars I & II, and the Cold War, we will investigate what led to the outbreak of these wars, certain military campaigns and their effects on national politics. Moreover, we will study the effects of warfare on the daily life of frontline soldiers as well as the homefront. The goal of the course is to introduce students to the role of warfare, military technology and its effect on everyday life and national politics in modern European history.

HIS 384 War and Peace since 1800
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
The effects of war and revolution with particular attention to Europe during the last two centuries.

HIS 386 New Deal America
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
When the bottom dropped out of the economy and huge dust storms blew across the prairies in the 1930s, it seemed as if the social world and nature alike had turned against Americans. But the country fought back against depression and drought in this creative and conflicted period. In this course we will explore the ferment of experimentation in politics and culture that marked this era, when ordinary people as well as national leaders forged new directions for American life that continue to affect our lives today. We will consider the implications of the “New Deal coalition,” the rise of a strong national government, the development of the Social Security system, the construction of public works, the impact of protest movements and massive strike waves, and the response of artists, writers, and the commercial entertainment industry.

HIS 387 The Greek City—Polis, Chora & Oklos
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
This course will examine the nature of ancient Greek civic and domestic life through the archaeology of urbanism, regional and rural settlement patterns, and houses and households. For the city and its territory we consider the rise of the polis; the types, design and placement of public spaces and buildings, including sanctuaries; orthogonal planning and Hippodamos of Miletus; and the relationship between the city and its countryside. Turning to the household, we take up issues ranging from the use, functions and decorative elaboration of domestic space; to the domestic economy; to issues of status, ideology, and gender in the ancient house.

HIS 388 Women, Gender, and Sexuality in Europe—1789 to the Present
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
How have European women’s lives changed over the last two hundred years? What sparked feminist movements in the late 19th century and again after 1968? How have changing ideas about gender roles and sexuality affected the ways in which European women defined themselves? This course will examine these and other questions through a variety of sources in a broad survey of European cultural, political, and social development during this period.

HIS 389 The Pattern of Chinese History
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Survey of the broad sweep of Chinese history from its recorded origins in the second millennium, before the Common Era to about the middle of the second millennium of the Common Era. History consists largely of ongoing interactions between human activities and subsequent human interpretations of those activities. Civilizations arise in tension with the natural world and gradually assume certain shapes that are later modified but rarely, if ever, transformed. We begin by examining the pattern of Chinese history from the Xia cultural horizon through the Han dynasty, including the rise and fall of five different kinds of cultural-political orders that exerted strong influence on social and economic developments. We then analyze the recapitulation and partial reconfiguration of that pattern of continuity and change under the influence of Indian Buddhism and Mongol rule. We conclude with the idea that the resulting “structure” of Chinese history can help us anticipate the outcome of China’s more recent interactions with other civilizations—including that of the “West”—since 1600 CE.

HIS 391 China and The World
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Opinions vary widely from those who believe that China will become the world’s preeminent military power to those who think that China’s entrance into the World Trade Organization will result in widespread unemployment and social misery that may precipitate the collapse of the People’s Republic with unforeseeable consequences for all of us. Is China likely to follow the paths of Germany, Japan, and the Soviet Union that challenged American preeminence in the twentieth century or will it pursue a vision of world order that might provide a more effective alternative to the American superpower? This course seeks to offer some perspective on such issues by surveying the history of China’s relations with the rest of the world from the Qing dynasty (1644-1911), that established most of the territorial and ethnic baselines of today’s China, through the Republic (1911-), when the U.S. became deeply involved in China’s domestic affairs, and into the People’s Republic (1949-), that is widely presumed to be seeking to recover China’s “rightful place in the world.”

HIS 392 Medieval Civilization II
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
The second semester of a two-semester sequence devoted to an exploration of the medieval European world. It is not assumed, however, that students enrolled in the course have previously taken HIS 393 Medieval Civilization I. HIS 393 examines the earlier Middle Ages, from c.450 to c.1100 AD. HIS 392 will consider the later period, from c.1100 to c.1500. This period was marked by new patterns of spiritual and intellectual life, by the emergence of new ideals of aristocratic demeanor and behavior (chivalry and courtly love), by the growth (and the decline) of papal authority, by the re-emergence of cities, and the revival of monarchical power. This course will focus on certain kinds of historical themes and issues and will adopt a certain approach to historical inquiry. The main purpose is to understand the culture and society of the medieval world. How was society organized? What was the mental outlook? What values were assumed or articulated? In particular, what was the role of Christianity, and how did Christianity as a set of beliefs and as a set of institutions influence, and in turn become influenced by, medieval society? In considering these matters, less attention will be paid to a narrative of events than to a scrutiny of key developments and transformations. We will look at the barbarian world, the Carolingian Empire, the Vikings, the development of feudalism, and the circumstances that led to the First Crusade.

HIS 394 Medieval Civilization I
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
The first semester of a two-semester sequence devoted to an exploration of the medieval European world. This course examines the earlier Middle Ages, from c.450 to c.1100 AD, that is from the collapse of the Roman Empire in the West and the disintegration of classical civilization to the First Crusade. This course will focus on certain kinds of historical themes and issues and will adopt a certain approach to historical inquiry. The main purpose is to understand the culture and society of the medieval world. How was society organized? What was the mental outlook? What values were assumed or articulated? A particular focus will be the role and significance of Christianity. How did Christianity as a set of beliefs and as a set of institutions influence, and in turn become influenced by, medieval society?
**HIS 395 Special Topics**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Subject matter determined by instructor.

**HIS 397 20th Century American Popular Culture to 1945**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
History of American popular culture to 1945.

**HIS 398 American Popular Culture since 1945**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
History of American popular culture since 1945.

**HIS 400 Comparative Fascism**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Fascism was the novel political phenomenon of the twentieth-century world. It remains one of the most widely known and yet least understood terms in the modern political lexicon. This seminar will examine the origins and development of fascist ideology and practice, comparing and contrasting the various fascist movements to emerge throughout Europe in the 1920s and 1930s. At the center of the course will be the question of whether fascism is best defined as an ideology, a political culture, an ethic or morality, a historical era, or whether the term is a useful analytical device at all. Readings and seminar discussions over the course of the semester will consider diverse historical interpretations of fascism, seeking to understand the social, political, and cultural origins of fascist movements and the processes by which they led to such devastating consequences. In the final weeks of the semester, the seminar will examine fascist-like movements outside of Europe and after 1945, analyzing the similarities and differences they present relative to the classic forms of interwar European fascism.

**HIS 401 Alcohol and Other Drugs in American History**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Explores the worlds of drug users and traffickers; the cultural politics of anti-drug campaigning and enforcement; the central and changing role of organized medicine; and the impact of globalization on drug trade and control in the US.

**HIS 402 The Spanish Civil War**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
The Spanish Civil War remains an archetypal modern civil war six decades following its conclusion. This course examines the many debates surrounding the origins of the war, the explanations for its outcome, and its legacy in Spanish and world affairs. Students will read personal war memoirs, historical novels, political tracts, and history texts, and will address these critically in oral presentations and written assignments. The seminar will seek to understand the origins and results of the Spanish conflict, and to gain perspective on the significance of revolutionary civil wars in the shaping of the contemporary world.

**HIS 403 Special Topics**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Subject matter determined by instructor.

**HIS 405 What is History?**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Student research on topics that students choose, combined with exploring how historians study the past.

**HIS 407 Church and State Relations**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
History of the legal and constitutional issues arising from the religion clauses of the first amendment to the constitution.

**HIS 409 Voyages of Discovery**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Europeans have always been on the move, visiting or trading with other parts of the world, or bent on conquest as during the medieval Crusades. With the discovery of the New World, a new era nonetheless opens when the accumulation of territory and goods would appear boundless, inciting further voyages to find places as yet “undiscovered” and “unclaimed.” Through primary readings of explorers’ accounts and through secondary analyses, we will chart the changing aims and justifications for such explorations: what drove them, what stimulated individuals who undertook them, who financed them and to what ends.

**HIS 411 Tudor-Stuart Biography**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Intensive experience in writing the biography of King Henry VIII from primary sources, such as letters and papers of Henry VIII.

**HIS 412 Topics in Women’s History**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
This course will explore the history of women in the United States. Seminar readings will begin with the colonial period and continue through the mid-20th century. Topics of focus include women’s work and family lives; women’s political movements and relationship to the state; differences and conflicts across race and class; the expression and regulation of female sexuality; and changing definitions of femininity and womanhood. We will also read articles on feminist theory that are relevant to historical interpretation.

**HIS 413 Topics in American Political History**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Varying topics in American political history, as chosen by the professor.

**HIS 414 Cuban Revolution**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
A brief inquiry into the subject of 20th Century Revolutions with an emphasis on Latin America. The class focuses on the general problem of Revolution and then shifts to three case studies, Mexico 1910-1940, Cuba 1959-1968 and Argentina 1946-1952. We will debate the professor’s view that revolutions cause more harm than good and are generally an extension of liberal social reforms.

**HIS 415 Topics in Renaissance History**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Varying topics in Renaissance history, as chosen by the professor.

**HIS 416 European Immigrant Lives**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
This seminar seeks to understand the aspirations and experiences of the millions of ordinary men and women who immigrated to the USA from Europe in the centuries of the European mass migrations between 1820 and 1920, and the influence of the presence of these immigrants on the shaping of American society. Students also will gain insights into the central debates among historians of immigration about the nature of these immigrants’ experiences in leaving Europe and resettling in the United States. Finally, some part of the course will be spent comparing historical and contemporaneous immigrations into the USA. The readings will consist of histories, novels, and sociological studies.

**HIS 419 Special Topics**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Subject matter determined by instructor.

**HIS 420 Special Topics**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Subject matter determined by instructor.

**HIS 421 Topics in British History**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Varying topics in British history, as chosen by the professor.

**HIS 422 Topics in American Intellectual/Cultural History**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Varying topics in American intellectual and cultural history, as chosen by the professor.

**HIS 423 Problems in Modern European History**

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Varying topics in modern European history, as chosen by the professor.
**HIS 424 Topics in American Social History**
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Varying topics in American social history, as chosen by the professor.

**HIS 425 Global Genealogies of Race**
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
The purpose of this course is to help us develop a more complex idea of “race” as a global phenomenon. Much of what we know, or think we know, about “race” is derived from our particular history and experience in the United States. But American ideas and enactments of “race” are by no means universal. In this course, we will explore the development of racial ideas in a variety of historical and geographical contexts.

**HIS 426 Special Topics**
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Subject matter determined by instructor.

**HIS 427 Religion & Society—Ancient Greek Cities**
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Analysis of the role of religion in the ancient Greek polis with attention to the archaeological evidence for cult practice, the representation of ritual acts in Greek literature, gender difference and religious ideology, and the ritual of life cycle.

**HIS 429: History Of The American Landscape**
Credits: 3  
Semester:  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Introduces students to the historical study of the human-made landscape. Focusing on phenomena ranging from Puritan town plans to streetcar suburbs, and domestic architecture to shopping plazas, students learn to evaluate the landscape as the historical artifact of human activity and human choices, shaped by a shifting mix of cultural values, economic patterns, technological developments, and government policies.

**HIS 434 Topics in Early Modern Europe**
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Varying topics in early modern European history, as chosen by the professor.

**HIS 435 History of Working Women**
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Changes in women’s work in the home, in the family, and in the labor force in the 19th and 20th centuries. Major themes include the impact of urbanization and industrialization on working women in different ethnic and racial communities, their experience with and in unions and their conflicts with them, and their contributions to labor struggles. Covers the period from the 1830s; examines the growth of new sectors of the female labor force and the beginnings of unionization in the clerical and service industries. Involves extensive reading in primary and secondary sources, class participation, and a paper or research project.

**HIS 438 European Intellectual History**
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
An introduction to the intellectual history of Europe since the Enlightenment studied through analysis and important documents of philosophy, political and social theory, literature and art. A central focus of this course will be the consciousness of a crisis of modern society and culture that permeated broad sections of nineteenth and twentieth century thought. The course begins with an examination of the humanist values of the Enlightenment, traces their fate in the nineteenth and twentieth centuries, and concludes with the question of their survival in our time. Readings will be selected from a variety of thinkers - Voltaire, Goethe, Hegel, Marx, Dostoevsky, Nietzsche, Kafka, Max Weber, Freud, Brecht, Sartre, Orwell, and Foucault - representing a broad spectrum of philosophical and political opinion. At the same time an attempt will be made to examine the history of ideas within the broader framework of the political, social, economic, and cultural history of the nineteenth and twentieth centuries.

**HIS 444 American Cold War History**
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
This seminar will deal with the history of the U.S., both internationally and domestically, from the end of the Second World War to the dissolution of the U.S.S.R. in the early 1990s. Topics will include the post-war competition in Europe between the Americans and the Soviets in the immediate post-war years, the Korean War, the Red Scare, the nuclear arms race and protests against nuclear testing, the Civil Rights Movement, Vietnam and the anti-war movement, and the roles of Gorbachev, Reagan, and the nuclear freeze movement during the arms race of the 1980s.

**HIS 446 Topics in Diplomatic History**
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Varying topics in diplomatic history, as chosen by the professor.

**HIS 451 Topics in the American Revolution**
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Varying topics in American Revolution history, as chosen by the professor.

**HIS 452 Topics in Colonial America**
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Varying topics in colonial American history, as chosen by the professor.

**HIS 454 Special Topics**
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Subject matter determined by instructor.

**HIS 455 Sex and Empire**
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
A comparative history of European imperialism in the Americas, Africa, and Asia through the prism of gender and sexuality.

**HIS 456 European Underground Movements**
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
The causes and effects of European underground movements from 1796 to 1945.

**HIS 458 JFK's Assassination and U.S. Foreign Policy**
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
The death of President John F. Kennedy remains an enigma. Hundreds of books, articles, and films have covered this event. Oliver Stone's film JFK is shown at least monthly on cable TV. This course will examine the events surrounding the tragedy. We will look closely at what Kennedy and his advisors were attempting to accomplish, especially in international policy. Topics covered will include: the CIA, J. Edgar Hoover and the FBI, the Vietnam War, U.S.-Soviet relations, defense appropriations, Latin American policy and Robert Kennedy's war on organized crime. The focus will be on the degree to which Kennedy was attempting to change the world role of the United States and modify the institutions that formulated international policies. The emphasis will be on identifying those who lost and those who gained from the President's death.

**HIS 465 Childhood Through the Ages**
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
The history of childhood.

**HIS 472 Topics in the History of Science**
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Subject matter determined by instructor.
HIS 473 Technology in American Society & Culture  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Subject matter determined by instructor.

HIS 475 The Great War and European Society  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
This class will examine the causes of World War I and its consequences for European society and culture. Students will learn to evaluate a variety of historical sources and become acquainted with different historical analyses and interpretations of the war. The first two parts of the course will explore the causes and course of the war, as well as the political upheavals that followed in the war's wake. Finally, we will turn to WWI's impact on European culture and the way in which the memory of the war has been shaped.

HIS 480 Topics in Early American Legal and Constitutional History  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
The interplay between race, ethnicity, and the law during the century after the U.S. Constitution's creation.

HIS 481 A Chinese Dynasty: the Qing, 1644-1911  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
The seminar traces the rise, florescence, and decline of the Qing polity in an effort to place it in the larger contexts of Chinese, Asian, and world history. It begins with recent controversies over whether the Qing succeeded in unifying a fifth of the world's people in a single state and in attaining a high degree of peace, prosperity, and social justice because it adopted and carried on cultural traditions called Chinese or, rather, because it was a Manchu conquest empire that ruled the Han Chinese and neighboring peoples (the Mongols, Uighurs, and Tibetans) with greater sensitivity and skill than did previous or would subsequent Chinese political orders. The course then attempts to transcend this debate by examining the ways in which successive reigns or, roughly, generations, of Qing subjects (or citizens) situated themselves in time and space. After isolating those perspectives, we will try to use them as keys to the cultural, political, social, and economic evolution of the system from the mid-seventeenth century to the early twentieth.

HIS 482 Problems in Japanese History  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Subject matter determined by instructor.

HIS 484 Problems in Chinese History  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Subject matter determined by instructor.

HIS 485 Twentieth-Century China Politics  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
This course examines Chinese cultural, political, and social history from 1900 through 1999 with particular attention to its evolving place in a changing world. It addresses such issues as: the nature of the Qing system (an empire?) and the forces that brought it to an end in 1911; the roles of various social groups, including students, women, workers, and farmers in first founding the Republic and then overthrowing it in 1949; and the conditions of the rural masses, intellectuals, minorities, and the Diaspora before and after the urban protests of 1989.

HIS 488 Topics in Slave Folklore  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Investigation of what slave folklore tells us about the nature of slavery and the lives of slaves.

HIS 489 Historiography  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Investigation of the development of historical techniques, patterns, and approaches through time.

HIS 490 Rebellion & Revolution in History  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Subject matter determined by instructor.

HIS 491 The U.S. in the 1920s and 1930s  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
This seminar focuses on changes that occurred in American society and politics in the period between the two world wars. Seminar participants will read and discuss books that put forward interpretations of this era and write a research paper based on “primary sources,” (that is, evidence that comes directly from the period under investigation). The research paper will deal with a major public issue debated during this time. The primary documents that will serve as the evidence base for the papers will be congressional hearings and the Congressional Record. Especially in the 1930s, during the time known as the “New Deal,” committees of the U.S. Congress heard testimony on almost every conceivable subject.

HIS 492 Problems in Japanese History  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Subject matter determined by instructor.

HIS 493 Topics in African-American History  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Varying topics in African-American history, as chosen by the professor.

HIS 494 Problems in Chinese History  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Subject matter determined by instructor.

HIS 495 Twentieth-Century China Politics  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Subject matter determined by instructor.

HIS 496 Public History Internship  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: TUT  
Students learn to connect their historical studies with the world outside the academy by doing an internship at a historical site or museum. Students must arrange the internship themselves. The internship site must have a strong connection to history; some local examples include the Buffalo and Erie County Historical Society, the Amherst Museum, Old Fort Niagara, and the Theodore Roosevelt Inaugural site. Students register for this course through the History Department's Director of Undergraduate Studies.

HIS 497 Honors Thesis I and II  
Credits: 3  
Prerequisites: permission of instructor  
Corequisites: None  
Type: SEM/TUT  
All seniors in the History honors program are required to take this two-semester sequence. The first semester consists of weekly seminars that will help students choose a good topic and teach research strategies. The second semester involves a research project arranged with and carried out under the guidance of a faculty member.

HIS 498 Undergraduate Research  
Credits: 3  
Prerequisites: permission of instructor  
Corequisites: None  
Type: TUT  
Involves a research project arranged with and carried out under the guidance of a faculty member. Required of all students in the honors program in history.

HIS 499 Independent Study  
Credits: 1  
Prerequisites: permission of instructor  
Corequisites: None  
Type: TUT  
Course topic and requirements arranged in consultation with instructor. Except in special circumstances, this course cannot be used to satisfy the department's seminar requirement.
Hesse's life and works.

HMN 318 Black Presence in Latin American Culture
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Examines the main biological and social aspects of human language to create an awareness of the central role that language has in our being human and in our life as members of society.

HMN 321 Youth Culture in Latin America
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Studies contemporary youth culture in Latin America.

Industrial Engineering
IE 101 Discover Industrial Engineering
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Introduces students to the field of industrial engineering, and the IE department at UB, through a series of real life IE case studies and examples.

IE 306 Statistical Methods for Engineering
Credits: 4
Prerequisites: EAS 305
Corequisites: None
Type: LEC/REC
Principles and methodologies of statistical inference; methods of data analysis; point and interval estimation; tests of hypotheses; correlation and regression. Introduces analysis of variance methods.

IE 320 Engineering Economy
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines the development of individual and group research techniques and reading interpretation. Requires a paper and bibliography on a subject relating to Puerto Rican and Latin American culture.

IE 323 Ergonomics
Credits: 4
Prerequisites: None
Corequisites: None
Type: LEC
Basics of design, analysis, and selection of manufacturing facilities and material-handling equipment. Approaches to analyzing manufacturing and material-handling systems. Applications of computers in modern facilities design and material handling, emphasizing material-flow control and storage. Economic justification models for manufacturing and material-handling systems.

IE 374 Introduction to Operations Research: Probabilistic Models
Credits: 4
Prerequisites: None
Corequisites: None
Type: LEC
Continuation of IE 373, including uncertainty, risk, and the probabilistic approach in operations research. Topics include small and large models of game theory, decision analysis, stochastic dynamic programming, elementary mathematical models of reliability, Markov decision processes, waiting-line models with Poisson arrival and exponential service, game theory, and decision analysis.

IE 406 Computer-Integrated Manufacturing
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Basic and important principles in computer-integrated manufacturing (CIM). Based on an understanding of modern production and manufacturing systems, the course further introduces to students the use of computers for the integration of all functional areas in a manufacturing enterprise. Topics include computer-aided design (CAD), geometric models and data structures, computer-aided process planning (CAPP), group technology (GT), computer-aided manufacturing (CAM), and database applications in manufacturing.
IE 408 Quality Assurance
Credits: 3
Prerequisites: IE 306 or equivalent
Corequisites: None
Type: LEC
Topics in statistical-quality-control systems. Includes selection of charts and other statistical-quality-control systems and sampling acceptance plans. Design and analysis of a wide variety of statistical control systems. Considers the utility of these techniques in the attainment of working control objectives.

IE 409 Six Sigma Quality
Credits: 3
Prerequisites: senior standing in IE or permission of instructor
Corequisites: None
Type: LEC
A set of management principles and methods for improving the quality of the product(s) produced and ultimately the productivity of the organization. The course focuses on team building and encouraging employee involvement in problem solving. Students are taught how to involve all employees in reducing product variation and eliminating rework and scrap.

IE 412 Decision Analysis
Credits: 3
Prerequisites: EAS 305
Corequisites: None
Type: LEC
Decision analysis that extends the domain of decision-making problems from those considered in traditional statistical hypothesis testing scenarios: modeling decisions, which emphasize structuring decision problems using techniques such as influence diagrams and decision trees; modeling uncertainty, which covers subjective probability assessment, use of classical probability models, Bayesian analysis, and value of information; and modeling preferences, which introduces concepts of risk preference, expected utility, and multi-attribute value and utility models.

IE 420 Industrial and Systems Laboratory
Credits: 3
Prerequisites: All required 300 level ISE courses
Corequisites: IE 477
Type: LEC/LAB
Integrates and applies knowledge from multiple aspects of industrial engineering to analyze and solve real-world ID problems. Combines knowledge of production planning, facilities design, operations research, and human factors.

IE 435 Human-Computer Interaction
Credits: 3
Prerequisites: IE 323 or permission of instructor
Corequisites: None
Type: LEC
Familiarizes students with the principles and practice of user- and user-centered design of human-computer interfaces. By the end of the course, students are able to identify, describe, and implement a subset of methods appropriate for requirements gathering, user and task modeling, prototype development, and user test plan development, implementation, and analysis. Additionally, students are able to apply principles in user-centered design to interface design.

IE 436 Work Physiology
Credits: 3
Prerequisites: IE 323 or permission of instructor
Corequisites: None
Type: LEC
Introduces structure and functioning of the human body. Examines environmental factors such as temperature, humidity, and biological rhythms; and applications and implications of physiological measures, such as energy expenditures, heart rate, and E.M.G.

IE 441 Human Factors in Safety
Credits: 3
Prerequisites: IE 323 or permission of instructor
Corequisites: None
Type: LEC
Overall view of the professional field, particularly emphasizing the role of the human, and human factors, in safe working systems. Provides information relevant to understanding basic concepts associated with systems safety, such as the legislative environment, management culture, and sources of workplace hazards; understanding the need to consider the human when designing safe, complex systems; and analyzing a work system to predict its hazards and select possible interventions.

IE 459 Special Topics
Credits: 3
Prerequisites: senior standing in engineering
Corequisites: None
Type: LEC
Studies special areas of interest to students and instructor. Content varies from section to section and semester to semester.

IE 460 Special Topics
Credits: 3
Prerequisites: senior standing in engineering
Corequisites: None
Type: LEC
Studies special areas of interest to students and instructor. Content varies from section to section and semester to semester.

IE 477 Digital Simulation
Credits: 4
Prerequisites: IE 306, IE 374, and computer programming skills
Corequisites: None
Type: LEC/REC
Topics include the development of digital simulation models of complex systems using up-to-date software tools and methods.

IE 482 Robotics
Credits: 3
Prerequisites: senior standing in engineering
Corequisites: None
Type: LEC
Analyzes robots and robotic systems: kinematics, coordinate transform, numerical control, off-line programming, robot vision, and simulation of robotic systems.

IE 496 Industrial Internship
Credits: 1
Prerequisites: Senior standing in Industrial engineering (all required 300 level IE courses are prerequisites)
Corequisites: None
Type: LEC/TUT
A field experience working on an industrial engineering project in a manufacturing plant, hospital, library, police department, or similar location under the joint direction of a preceptor from industry and a faculty advisor. Projects are selected that integrate the material learned in academic courses. Requires a written report and an oral presentation.

IE 498 Undergraduate Research
Credits: 1
Prerequisites: Permission of Instructor
Corequisites: None
Type: TUT
Students collaborate with faculty research mentors on ongoing research of the faculty member or conduct independent research under the guidance of a faculty member.

IE 499 Independent Study
Credits: 1
Prerequisites: Permission of Instructor
Corequisites: None
Type: TUT
Student directed independent learning activity guided & mentored by faculty. Students should discuss registration with the faculty member and have a plan in writing upon registering. Note that activities that are primarily research (vs. study or project based) should be conducted under the IE 498 number.

INF 102 Introduction to Informatics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduction to informatics; emphasizes a broad overview of five aspects of informatics: information technology, human-computer interaction, new media, social implications of technology, and the transformation of data to information.

INF 125 Intro to the Internet as an Informatics Resource
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Provides a comprehensive review of the Internet and its components, web, email, ftp etc. Emphasizes its current use and future potential as an information resource. Introduces how information architects can use HTML and CSS, as well as various types of audio/visual media. Covers web searching and how XML can be used to classify semantic information on web pages.

INF 215 Programming for the Web I
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Uses HTML and cascading style sheets (CSS) to create web sites employing the principles of usability engineering and information architecture. Topics include the creation of web features, FTP, accessibility, usability, information design, and graphic design of web pages.

INF 216 Programming for the Web II
Credits: 3
Prerequisites: INF 125, INF 215
Corequisites: None
Type: LEC
Uses PHP language to construct CGI applications integrating mySQL databases with the web. Topics include server side scripting using PHP, information exchange via web-based forms and display pages, variables, control statements, input/output functions, and database access via mySQL PHP routines.

INF 223 Usability Research
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Provides students with an understanding of the application of ethnographic methods to interface usability. Emphasizes the importance of evaluation in the design and development of interfaces, through user interviews, focus groups, think-aloud protocols and other human-factor methods.
INF 311 Information Architecture  
Credits: 3  
Prerequisites: INF 216  
Corequisites: None  
Type: LEC  
Presents an overview of information architecture; provides students with an understanding of the methods and techniques necessary to design and implement effective and cost efficient information technologies such as digital libraries, database systems, and a range of other web-accessible resources. Also covers the basic principles of information architecture, organization of information, user-centered design and usability, as well as tools and techniques for developing web-enabled applications.

INF 410 Information Visualization  
Credits: 3  
Prerequisites: PSY 101, Statistics course  
Corequisites: None  
Type: LEC  
Discusses basic principles that impact the design of information and the design of interactive information visualization systems. Examines existing systems and designs, and provides an overview of practical applications.

INF 420 Psychology of Human Computer Interaction  
Credits: 3  
Prerequisites: PSY 101, Writing course  
Corequisites: None  
Type: LEC  
Surveys human-computer interaction and introduces psychological and other behavioral science knowledge and techniques useful in design of computer systems for human use. Discusses basic psychological phenomena of human cognition, memory, problem solving, and language and how these processes relate to and condition interaction between humans and interactive computer systems.

INF 430 Informatics Research  
Credits: 3  
Prerequisites: INF 223, Research course, Writing course  
Corequisites: None  
Type: DIS  
Prepares students for INF 494, the Informatics Senior Capstone. Explores risk reduction and uncertainty in informatics decision-making. Applies evaluation concepts learned in earlier research courses. Students propose projects that become the basis of the INF 494 senior capstone.

INF 470 Special Topics  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Topic of current interest. Topics may include information management, e-commerce, and competitive intelligence.

INF 471 Special Topics in Informatics & Networks  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Topic of current interest. Topics may include systems administration, wireless networking, web servers, RFID.

INF 472 Special Topics in Informatics Research  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Topic of current interest. Topics may include ethnographic methods. Iterative design, usability research.

INF 473 Special Topics in Informatics & the Web  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Topic of current interest. Topics may include web design, the semantic web, metadata.

INF 474 Special Topics in Informatics and Databases  
Credits: 1  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Topic of current interest. Topics may include system analysis, advanced database design.

INF 494 Informatics Senior Capstone  
Credits: 3  
Prerequisites: INF 311, INF 420, INF 430  
Corequisites: None  
Type: SEM/LAB  
Senior capstone project; students demonstrate the knowledge and skills they have acquired through the program. Provides students with the opportunity to create knowledge, not merely absorb it. Students will present or display their work to their peers and faculty.

INF 496 Internship  
Credits: 1  
Prerequisites: Permission of Instructor, INF 223, Senior Standing, Informatics Major  
Corequisites: None  
Type: TUT  
Hands on experience in the field; observe and participate under the supervision of an experienced professional; the student will be able to explore new ways of being that lie beyond his or her current state.

Italian  

ITA 101 Elementary Italian 1st semester  
Credits: 5  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Involves work on basic structure and vocabulary emphasizing the language as spoken and heard, and developing skills of reading and writing.

ITA 102 Elementary Italian 2nd semester  
Credits: 5  
Prerequisites: ITA 101 or permission of instructor  
Corequisites: None  
Type: LEC  
Involves work on basic structure and vocabulary emphasizing the language as spoken and heard, and developing skills of reading and writing.

ITA 106 Italian for Spanish Speakers  
Credits: 5  
Prerequisites: None  
Corequisites: None  
Type: LEC  
An innovative course that seeks to teach the Italian language to speakers of Spanish, a Romance language that shares with Italian similar grammatical and syntactical structures. Enables Spanish native speakers, or advanced students of Spanish, to acquire an intermediate-level mastery of the following four skills: listening, speaking, reading, and writing.

Students who have completed ITA 101 and/or ITA 102 should not register for ITA 106 as no credit will be given for duplicate courses.

ITA 151 Intermediate Italian 1st semester  
Credits: 3  
Prerequisites: ITA 102, or three or more years of high school Italian, or by placement  
Corequisites: None  
Type: LEC  
Studies grammar and pronunciation centered on conversation, and works on vocabulary expansion through literary and nonliterary readings. Previously ITA 203.

ITA 152 Intermediate Italian 2nd semester  
Credits: 3  
Prerequisites: ITA 151 or permission of instructor  
Corequisites: None  
Type: LEC  
For students who wish to enter the Italian major program. Involves advanced-level Italian; emphasizes grammatical and critical readings. Previously ITA 206.

ITA 211 Advanced Italian Grammar, Composition, and Conversation I  
Credits: 3  
Prerequisites: ITA 152, or three or more years of high school Italian, or permission of instructor  
Corequisites: None  
Type: LEC  
Involves reading and discussion of excerpts from Italian writers, and introduces the main personalities and works representing Italian civilization.

ITA 212 Advanced Italian Grammar, Composition, and Conversation II  
Credits: 3  
Prerequisites: ITA 321 or permission of instructor  
Corequisites: None  
Type: LEC  
Involves reading and discussion of excerpts from modern Italian writers, and introduces the main personalities and works representing Italian civilization.

ITA 382 Introduction to Second Language Acquisition Theory  
Credits: 3  
Prerequisites: none; basic linguistics courses and/or language courses helpful  
Corequisites: None  
Type: LEC  
Explores the factors that affect learning a second language (e.g., age, native language, environment, goals, and learner strategies, and outlines the succession of theories about how people acquire a second language.

ITA 401 Directed Reading  
Credits: 3  
Prerequisites: permission of instructor  
Corequisites: None  
Type: TUT  
The student chooses several literary works he or she is interested in and studies them under the guidance of the professor.

ITA 402 Directed Reading  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: TUT  
The student chooses several literary works he or she is interested in and studies them under the guidance of the professor.

ITA 403 The Works of Dante  
Credits: 3  
Prerequisites: ITA 206, or three or more years of high school Italian  
Corequisites: None  
Type: LEC  
Considers medieval literature in Provence and France, including the works of Dante, beginning with Vita Nuova through the Divine Comedy. Explores the main personalities and works representing Italian civilization.
ITA 404 The Works of Dante
Credits: 3
Prerequisites: IA 403 or permission of instructor
Corequisites: None
Type: LEC
Considers medieval literature in Provence and France, including the works of Dante, beginning with Vita Nuova through the Divine Comedy. Explores the main personalities and works representing Italian civilization.

ITA 405 Twentieth-Century Italian Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines modern literature of Italy starting with such nineteenth-century forerunners as Verga, Pascoli, D'Annunzio. Pays particular attention to the fascist regime, its rise and fall, World War II, and the neocapitalist society of the last two decades.

ITA 411 Petrarch and Boccaccio
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Presents selected readings of the masterworks of Giovanni Boccaccio and Francesco Petrarca, with attention to the authors who influenced their work and authors who were subsequently influenced by these two crowns of Italian literature.

ITA 412 Literature of the Trecento and Renaissance
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Presents selected readings and analyses, from Petrarca and early Italian poets, as well as Boccaccio and early Italian novelists. Investigates the spirit of the Renaissance; including its poetry, epic prose, and pastoral romance versus the social writings of Machiavelli, Castiglione, and Guicciardini.

ITA 413 Italian Theatre
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies the history of Italian theatre; including Machiavelli, Commedia dell Arte, Goldoni, Alfieri, D'Annunzio, Pirandello, and others.

ITA 415 Modern Novel from Manzoni to the Present
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Involves a study of Manzoni's masterpiece and subsequent monuments of Italian fiction. Surveys famous novels dealing with industrialization, alienation, and experimentalism.

ITA 417 Twentieth-Century Italian Poets
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies Italy's poets from the turn of the century through two world wars.

ITA 418 The Works of Pirandello
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines Pirandello's short stories, two novels, and six plays, and analyzes their social, psychological, and metaphysical questions.

ITA 422 Modern Italian Literature
Credits: 3
Prerequisites: IA 206 or permission of instructor
Corequisites: None
Type: LEC
Surveys poetry, prose fiction, and theatre from Leopardi and Manzoni to the present.

ITA 423 Dante and the Middle Ages
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Considers the works of Dante in terms of cultural, philosophical, and political upheavals of the thirteenth and early-fourteenth centuries. Taught in English.

ITA 424 Twentieth-Century Italian Theatre
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Investigates twentieth-century Italian theatre, from Pirandello to the present, with special attention given to dramatic theories by Filippo Tommaso Marinetti, Antonin Artaud, Bertolt Brecht, Luigi Pirandello, and others.

ITA 425 Italian Novella
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Considers the short story through seven centuries; presents representative examples from Boccaccio to the present.

ITA 426 Masterpieces of Early Italian Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies provincial and early Italian lyric poetry, including Guinizelli, Cavalcanti, Dante, Petrarch, and Boccaccio, as well as Italian prose selections of the same period.

ITA 427 Masterpieces of Modern Italian Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies Italian literature from Ariosto to Calvino.

ITA 429 Italian Cinema I
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC/LAB
Examines contemporary Italian society mirrored in the movies, especially Italian film from the 1930s, or fascist era, to the present.

ITA 430 Italian Directors
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC/LAB
Involves the study of postwar Italian film. Focuses on directors such as Fellini, Antonioni, Rossellini, Visconti, Bertolucci, and Pasolini.

ITA 444 Italian Renaissance Drama
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Explores the social, political, and aesthetic role played by the theatre of the Italian Renaissance with attention to the role of comedy, the influence of Humanism, the development of secular drama, the reawakening of classic texts, and the ways in which drama reflected and influenced Renaissance society. Studies the influence of Italian Renaissance drama on world theatre, with particular attention to the roots of Italian theatre within the evolution of William Shakespeare's works.

ITA 492 The Literatures of the Italian American Experience
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines history, folklore, sociology, politics, and artistic achievements as expressed by its most representative writers. Taught in English; no previous knowledge of Italian necessary.
Japanese

JPN 101 First-Year Japanese
Credits: 5
Prerequisites: None
Corequisites: None
Type: LEC
Develops basic language skills in speaking, reading, writing, and listening. The course is team-taught, and it is not open to native speakers.

JPN 102 First-Year Japanese
Credits: 5
Prerequisites: JPN 101 or permission of program director
Corequisites: None
Type: LEC
A sequel to JPN 101. Develops four-skills proficiency and expands knowledge of grammar. Not open to native speakers.

JPN 201 Second-Year Japanese
Credits: 4
Prerequisites: JPN 101 or permission of program director
Corequisites: None
Type: LEC/REC
A sequel to JPN 102. Develops four-skills proficiency and expands knowledge of grammar. Not open to native speakers.

JPN 202 Second-Year Japanese
Credits: 4
Prerequisites: JPN 201
Corequisites: None
Type: LEC/REC
A sequel to JPN 102. Further develops four-skills proficiency, with a focus on specialized vocabulary and concepts of science and technology, as well as scientific issues in society. Not open to native speakers.

JPN 203 Second-Year Japanese
Credits: 4
Prerequisites: JPN 202
Corequisites: None
Type: LEC
Introduces Japanese culture and society, and is taught in English.

JPN 301 Third-Year Japanese
Credits: 4
Prerequisites: JPN 202 or permission of program director
Corequisites: None
Type: LEC
Develops basic language skills in speaking, reading, writing, and listening. The course is team-taught, and it is not open to native speakers.

JPN 302 Third-Year Japanese
Credits: 4
Prerequisites: JPN 301
Corequisites: None
Type: LEC
Further develops four-skills proficiency, and reinforces and expands grammar and communication skills. Not open to native speakers.

JPN 361 Technical Japanese I
Credits: 4
Prerequisites: JPN 202 or equivalent
Corequisites: None
Type: DIS
Introduction to technical and scientific Japanese. Further development of four-skills proficiency, with a focus on specialized vocabulary and concepts of science and technology, as well as scientific issues in society. Not open to native speakers.

JPN 362 Technical Japanese II
Credits: 4
Prerequisites: JPN 361 or equivalent
Corequisites: None
Type: DIS
A sequel to JPN 361. Further development of four-skills proficiency, with a focus on specialized vocabulary and concepts of science and technology, as well as scientific issues in society. Not open to native speakers.

JPN 371 Business Japanese
Credits: 4
Prerequisites: JPN 202 or permission of program director
Corequisites: None
Type: LEC

JPN 372 Business Japanese
Credits: 4
Prerequisites: JPN 371 or permission of program director
Corequisites: None
Type: LEC

JPN 401 Fourth-Year Japanese
Credits: 3
Prerequisites: JPN 302 or permission of program director
Corequisites: None
Type: SEM
A sequel to JPN 302. Continues development of four-skills proficiency; further reinforces and expands communication skills through discussion and readings on Japanese culture and society.

JPN 402 Fourth-Year Japanese
Credits: 3
Prerequisites: JPN 401 or permission of program director
Corequisites: None
Type: SEM
A sequel to JPN 401. Continues development of four-skills proficiency; further reinforces and expands communication skills through discussion and readings on Japanese culture and society.

JPN 411 Introduction to Japanese Linguistics
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Introduces major areas of linguistic description of Japanese and functions of the language in relation to social structures and interpersonal relationships. Taught in English.

JPN 451 Teaching Japanese as a Foreign Language
Credits: 3
Prerequisites: four years of Japanese language study or permission of instructor
Corequisites: None
Type: SEM
Introduces curricula, instructional materials, methods, classroom techniques, and evaluation strategies associated with the teaching of Japanese as a foreign language. Students acquire practical experience by participating in teaching demonstrations and class observation.

JPN 481 Special Topics
Credits: 3
Prerequisites: Permission of Instructor
Corequisites: None
Type: SEM
Course content varies per semester.

JPN 482 Special Topics
Credits: 3
Prerequisites: Permission of Instructor
Corequisites: None
Type: SEM
Course content varies per semester.

JPN 494 Senior Capstone Course
Credits: 3
Prerequisites: None
Corequisites: None
Type: TUT
Course for senior-level majors intended to provide a learning experience that integrates knowledge from lower-level courses. Topics may vary.

JPN 496 Internship/Practicum
Credits: 3
Prerequisites: None
Corequisites: None
Type: TUT
Hands-on experience in language and cultural studies at institutions and organizations in Western New York and/or nationwide.

JPN 498 Undergraduate Research
Credits: 1
Prerequisites: None
Corequisites: None
Type: TUT
Students collaborate with faculty research mentors on an ongoing project or conduct independent research under the guidance of a faculty member. This experience provides students with an inquiry-based learning opportunity and engages them as active learners in a research setting.

JPN 499 Independent Study
Credits: 1
Prerequisites: permission of instructor
Corequisites: None
Type: TUT
Designed for advanced students of Japanese.
Judaic Studies

HEB 101 Elementary Modern Hebrew 1
Credits: 5
Prerequisites: None
Corequisites: None
Type: LAB
The first stage in learning Modern Hebrew - Reading, writing and elementary grammar. At this level, students become familiar with a basic vocabulary of 400 words, around which conversational exercises and classroom learning are built. A cultural segment makes the learning process relevant.

JDS 101 Introduction to Jewish History
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Major political, social, and theological trends in Jewish history, from the formation of ancient Israel until the present day.

HEB 102 Elementary Modern Hebrew 2
Credits: 5
Prerequisites: HEB 101 or permission of instructor
Corequisites: None
Type: LAB
Encourages improvement of reading and writing skills, and conversation. Studies complex verbal patterns and daily use of the language in an Israeli setting.

JDS 102 Crises in Jewish History
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Six issues in Jewish history and their impact on the development of Judaism and the Jewish community; analyzes the resilience and adaptability of a people under stress.

JDS 111 Great Jewish Books
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces and analyzes great works of Jewish literature from ancient to modern times: the Bible, Talmud; Guide for the Perplexed; poetry of the golden age in Spain; the great moderns, such as Agnon.

JDS 112 Women in the Jewish Family
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Comparative contemporary social and psychological studies of women intermingle with rabbinic ones in an endeavor to bring into sharper focus women's status, social roles, behavior, and impact on Jewish life; the Jewish woman in historical perspective, drawing upon oriental, European, and modern American societies.

JDS 141 Introduction to Yiddish I
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Students acquire the fundamentals of the sound system of Yiddish structure and basic reading and writing skills.

JDS 142 Introduction to Yiddish II
Credits: 3
Prerequisites: JDS 141
Corequisites: None
Type: LEC
Second semester of introductory course.

HEB 201 Intermediate Hebrew 1
Credits: 5
Prerequisites: HEB 102 or permission of instructor
Corequisites: None
Type: LEC
Involves review and mastery of materials learned in HEB 101 and 102. Concentrates on reading and discussing newspaper articles, writing letters and filling out forms and documents (job applications, postal claim forms, and so forth) which are useful for travel. Stresses understanding of basic cultural patterns.

JDS 201 Israel and the Ancient Near East
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
People of the Bible; the environment in which they lived; what they absorbed and rejected from Mesopotamia, Syria, Anatolia, Iran, Egypt.

HEB 202 Intermediate Hebrew 2
Credits: 5
Prerequisites: HEB 201 or permission of instructor
Corequisites: None
Type: LEC
Concentrates on review and mastery of material learned in HEB 201. Continuation of irregular verbs and verbal patterns. Stresses oral comprehension and speech, reading, and discussion of newspaper articles.

JDS 202 Israel and the Emergence of Judaism
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Post-biblical Jews and Judaism; their adaptation to Greco-Roman life; rise of Jewish sectarianism; writing of the Talmud.

JDS 203 Introduction to Judaism
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Judaism and the rich Jewish legacy: basic philosophical, theological, social, and political values of Judaism.

JDS 204 Seminar in Jewish Ethics
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Ethical principles of Judaism: love, justice, holiness, freedom of will, dignity of humans, purpose of life, imitation of God, family life, education, social welfare, race, and ecology.

JDS 205 Historical Geography and Archaeology of Israel
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Methods and results of excavation in Israel; development of material culture (pottery, architecture, and so forth) and its interpretation.

JDS 206 Chassidic Philosophy
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Unity of God; purpose of life; love and fear of God; significance of Jewish ritual holidays according to the various Chassidic groups.

JDS 207 Women in Jewish Society
Credits: 3
Prerequisites: JDS 112 or JDS 209
Corequisites: None
Type: LEC
Status of women in the structure of Jewish law. Emphasizes the variety of stresses, both legal and social, placed on Jewish women from ancient times to the contemporary world.

JDS 208 Women in Jewish Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Woman's role in classical Jewish literature; Pentateuchal narrative, Chronicles, Song of Songs, and the books of Ruth and Esther.

JDS 209 Women in Jewish History
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Women's role in Jewish history; the Bible, Talmud; Guide for the Perplexed; poetry of the golden age in Spain; the great moderns, such as Agnon.

JDS 210 Introduction to the Old Testament
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Critical, thematic, historic, and literary study of the roots of Judeo-Christian tradition as recorded in the Law, Prophets, and the Writings of ancient Israel; different methods of biblical criticism.

JDS 214 The American Jewish Woman
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Relationships and conflicts that shaped the identity of the American Jewish woman: Jewish women and the American women's rights movement; immigrant Jewish women and labor activism; impact of feminism on Judaism.

JDS 215 Introduction to Yiddish
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Concerns of Jewish religion today: faith, practice, Israel, the Holocaust, science, and the deity - according to Hermann Cohen, Leo Baeck, Franz Rosenzweig, Martin Buber, Abraham Heschel, and Mordecai Kaplan.

JDS 216 Modern Jewish Thought
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Women in Jewish society from ancient times to the present day; ethnic origins and backgrounds of contemporary Jewry in the United States, Canada, and Israel.

JDS 217 American Jewish History
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
American Jewish life from colonial beginnings to the present: immigration; assimilation; social mobility; education and the family; group identity.
JDS 260 Midrash: Rabbinic Exegesis
Credits: 3
Prerequisites: JDS 229 or permission of instructor
Corequisites: None
Type: LEC
Surveys the fascinating and creative literary devices and novel interpretation of Biblical narratives by Talmudic Age of the rabbinc scholars.

JDS 261 Responsa Literature
Credits: 3
Prerequisites: JDS 229 or permission of instructor
Corequisites: None
Type: LEC
Surveys the Responsa literature that answers every day life questions and that began in the post-Talmudic period and has continued to flourish until the present.

JDS 262 Topics in Hebrew Language and Literature
Credits: 3
Prerequisites: Permission of instructor
Corequisites: None
Type: LEC
Complements the offerings of Judaic Studies. Hebrew grammar or that of other Semitic languages (not Arabic) and reading of various periods’ literary texts in the original tongue.

JDS 265 Readings in the Hebrew Bible
Credits: 3
Prerequisites: JDS 250 or permission of instructor
Corequisites: None
Type: LEC
Readings of selected literature in the Hebrew Bible.

JDS 266 Minor Hebrew Prophets
Credits: 3
Prerequisites: JDS 265 or permission of instructor
Corequisites: None
Type: LEC
Book of Amos and other minor prophets in Hebrew; analyzes the style of Hebrew prophecy; grammatical exercises to improve and reinforce knowledge of syntax and vocabulary construction.

JDS 267 Wisdom Literature in the Hebrew Bible
Credits: 3
Prerequisites: JDS 265 or permission of instructor
Corequisites: None
Type: LEC
Selections from the books of Proverbs and Psalms in Hebrew illustrating the styles of this type of didactic literature, Hebrew Bible, and poetry.

JDS 280 Jewish Mysticism
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Jewish outlook concerning the mysteries of creation, the mystical concepts of the soul, reincarnation.

JDS 283 The Holocaust and Jewish Law
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Full range of legal and ethical problems posed during the Holocaust and the precedent-setting decisions set down in the Responsa literature.

JDS 284 Israel and Jewish Law
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces a full range of legal, ethical, and theological issues that surround the status of biblical and talmudic Israel; legal and theological questions that emerge and reemerge at the establishment of a modern Jewish state.

JDS 285 Talmudic Law
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces various processes, synthetic and analytic, out of which Jewish law developed its intricate legal systems.

JDS 301 Introduction to Jewish History
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces Jewish history from the creation of the Jewish people to the present.

JDS 302 Art and Archaeology of Ancient Assyria
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
The history and development of ancient Assyrian culture; focuses on how individual strains of different cultures in the variegated peoples that make up the ancestry and contemporaries of the historical Assyrians can be reworked by these ancient peoples to create a sense of common heritage; the relationship between ancient Assyria and biblical history.

JDS 304 Mesopotamian Archaeology
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies the masterpieces of the architecture, painting, and sculpture of the societies that lived in the Tigris and Euphrates Valleys until the era of the Persian Empire.

JDS 382 Topics in Talmudic Law
Credits: 3
Prerequisites: JDS 283, or JDS 284, or JDS 285, or JDS 295, or permission of instructor
Corequisites: None
Type: LEC
Specialized studies of how specific Jewish laws developed and their relationship to intricate legal systems, including civil and ritual law in Judaism.

JDS 384 Maimonides: His Life and Works
Credits: 3
Prerequisites: junior status
Corequisites: None
Type: SEM
Maimonides' life in Spain, Palestine, and Egypt; Maimonides and Aristotelian philosophy; the Mishnah Torah, the Guide for the Perplexed, and the Thirteen Principles of Faith.
Korean

KOR 101 First-Year Korean
Credits: 5
Prerequisites: None
Corequisites: None
Type: LEC
First-year (elementary) Korean aims to help students acquire elementary proficiency in Korean. Not open to students who have previous exposure to the Korean language. Places special focus on mastering pronunciation, writing system, basic vocabulary, and basic grammar used in carrying out simple real-life tasks. Students can expect a chance to understand cultural difference and identity as well.

KOR 102 First-Year Korean
Credits: 5
Prerequisites: KOR 101 or permission of instructor
Corequisites: None
Type: LEC
First-year (elementary) Korean aims to help students acquire elementary proficiency in Korean. Not open to students who have previous exposure to the Korean language. Places special focus on mastering pronunciation, writing system, basic vocabulary, and basic grammar used in carrying out simple real-life tasks. Students can expect a chance to understand cultural difference and identity as well.

KOR 201 Second-Year Korean
Credits: 4
Prerequisites: KOR 102 or permission of instructor
Corequisites: None
Type: LEC
Equips students with intermediate communicative skills in Korean. Equips students to initiate and be engaged in spontaneous dialogues with little difficulty. Students should be able to understand simple Korean text and compose short essays in Korean. Emphasizes expansion of knowledge of grammar and vocabulary.

KOR 202 Second-Year Korean
Credits: 4
Prerequisites: KOR 201 or permission of instructor
Corequisites: None
Type: LEC
Equips students with intermediate communicative skills in Korean. Equips students to initiate and be engaged in spontaneous dialogues with little difficulty. Students should be able to understand simple Korean text and compose short essays in Korean. Emphasizes expansion of knowledge of grammar and vocabulary.

KOR 211 Korean Language and Culture
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces Korean culture and society, including readings and discussions of Korean history, politics, economy, art, literature, and language. Taught in English.

KOR 301 Third-Year Korean
Credits: 4
Prerequisites: KOR 202 or permission of instructor
Corequisites: None
Type: LEC
Helps students to achieve advanced proficiency in Korean and become familiar with Korean culture. Expects students to engage in conversations on various concrete and abstract topics, and to improve their skills for understanding authentic Korean texts and composing essays in Korean. Students also expand their vocabulary, including basic Chinese characters.

KOR 302 Third-Year Korean
Credits: 4
Prerequisites: KOR 301 or permission of instructor
Corequisites: None
Type: LEC
Helps students to achieve advanced proficiency in Korean and become familiar with Korean culture. Expects students to engage in conversations on various concrete and abstract topics, and to improve their skills for understanding authentic Korean texts and composing essays in Korean. Students also expand their vocabulary, including basic Chinese characters.

KOR 311 Korean Literature I
Credits: 3
Prerequisites: Two years of Korean language study or permission of instructor
Corequisites: None
Type: LEC
Begins with a brief historical introduction to Korean literature. Students read and discuss various genres of Korean literature, including essays, novels, poetry, and drama.

KOR 312 Korean Literature II
Credits: 3
Prerequisites: Two years of Korean language study and/or KOR 331 or permission of instructor
Corequisites: None
Type: LEC
Second half of the KOR 331-KOR 332 sequence. Continues with study of essays, novels, poetry, and drama, focusing on modern to contemporary literature.

KOR 351 Korean Literature in Translation I
Credits: 3
Prerequisites: ENG 101
Corequisites: None
Type: LEC
Classical Korean literature from early times to the 19th century, taught in two parts—prose and poetry. Prose includes folktales, essays, short stories (18th C.) and pansori novels (18th-19th C). Poetry includes hyangga (the oldest poems before 10th C), shijo (10th-19th C), and kasa (18th-19th C). Crosslisted with ENG 463.

KOR 352 Korean Literature in Translation II
Credits: 3
Prerequisites: ENG 101
Corequisites: None
Type: LEC
Modern Korean literature since the 20th century, taught in two parts—prose and poetry. Prose is confined to short stories (Danneunsoosol), and they can be categorized into three distinctive periods of time: Japanese occupation (1905-1945), liberation and Korean wartime (1945-1956), and industrialization (1960's and after). Poetry (Hyundai) is from modern Korean poets, and they can be more easily classified according to the themes.

KOR 401 Advanced Korean Readings and Conversation
Credits: 3
Prerequisites: KOR 302
Corequisites: None
Type: LEC
Advanced Korean texts and culture. Students read newspaper articles, short stories, and essays in Korean and discuss various topics in Korean history and contemporary Korean culture determined by their interests in Korean.

KOR 411 Introduction to Korean Linguistics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Lays the groundwork for an understanding of how the Korean language operates. No prior knowledge of Korean is necessary, but does require a familiarity with basic linguistic theory. Students are introduced to major phonological, morphological, syntactic, semantic, and pragmatic characteristics of Korean in light of linguistic/cognitive universals and cross-linguistic variations.
### Latino/Latina Studies

#### KOR 451 Teaching Korean as a Foreign Language
- Credits: 3
- Prerequisites: three years of Korean language study or permission of instructor
- Type: LEC
- Helps students teach Korean as a foreign language to English speakers. We discuss a wide range of issues related to the teaching of Korean including various language teaching methods and their application to Korean teaching, textbooks and supplementary teaching materials, designing curricula and syllabi, testing and evaluation, and incorporating Korean culture. Students develop lesson plans, materials, and class activities. Graduate students read and discuss selected current research articles, give teaching demonstrations, and write a term paper.

#### KOR 481 Special Topics
- Credits: 3
- Prerequisites: None
- Corequisites: None
- Type: SEM
- Topics vary each semester.

#### KOR 482 Special Topics
- Credits: 3
- Prerequisites: None
- Corequisites: None
- Type: LEC/SEM
- Topics vary each semester.

#### KOR 496 Internship/Practicum
- Credits: 1
- Prerequisites: None
- Corequisites: None
- Type: TUT
- Hands-on experience in language and cultural studies at institutions and organizations in Western New York and/or nationwide.

#### KOR 499 Independent Study
- Credits: 1
- Prerequisites: permission of instructor
- Corequisites: None
- Type: TUT
- For advanced students of Korean.

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#### LLS 200 Black Roots in Spanish American Literature
- Credits: 3
- Prerequisites: None
- Corequisites: None
- Type: LEC
- Examines literature of the Spanish American black experience by writers of African and European ancestry.

#### LLS 204 Introduction to Puerto Rican Culture
- Credits: 3
- Prerequisites: None
- Corequisites: None
- Type: LEC/SEM
- Explores dichotomies, such as history and myth, culture and acculturation, and tradition and change in relation to the Puerto Rican experience on the island and on the mainland.

#### LLS 208 Twentieth-Century Puerto Rican Literature
- Credits: 3
- Prerequisites: None
- Corequisites: None
- Type: LEC
- Studies major Puerto Rican authors of the twentieth century within the framework of historical colonial Puerto Rican reality.

#### LLS 301 Ethnicity and the Puerto Rican Experience
- Credits: 3
- Prerequisites: None
- Corequisites: None
- Type: SEM
- Examines class and race as coordinates of the Puerto Rican experience in the world; also considers ethnicity as it relates to the discovery and perception of reality.

#### LLS 303 Mainland Puerto Rican Experiences
- Credits: 3
- Prerequisites: None
- Corequisites: None
- Type: SEM
- Examines lifestyle and emerging cultural personality of Puerto Ricans raised on the mainland, as well as Puerto Rican dynamics’ role in American social and cultural change.

#### LLS 305 Contemporary Afro-Caribbean Religion
- Credits: 3
- Prerequisites: None
- Corequisites: None
- Type: LEC
- Familiarizes students with the rich cultural syncretisms of Afro-Caribbean culture from a Latin American perspective, challenges the miasma of mysticism surrounding the religions as viewed by developed nations, and provides students with the basic skills necessary to conduct field research from an anthropological perspective.

#### LLS 307 History of Ideas in Puerto Rico
- Credits: 3
- Prerequisites: None
- Corequisites: None
- Type: SEM
- Examines sociopolitical ideas that have exerted a decisive influence in the formation of a Puerto Rican culture and conscience from the second half of the nineteenth century to present times.

#### LLS 308 Black Presence in Latin American Culture
- Credits: 3
- Prerequisites: None
- Corequisites: None
- Type: SEM
- Considers black presence and black heritage within Latin American culture, viewed through literature, films, art, and the theatre. Also explores stereotypes in arts and the mass media.

#### LLS 401 Seminar in Puerto Rican Studies
- Credits: 3
- Prerequisites: None
- Corequisites: None
- Type: TUT
- Special topics pertaining to Puerto Rican and Latin American experiences.

#### LLS 402 Puerto Rican Literature
- Credits: 3
- Prerequisites: None
- Corequisites: None
- Type: TUT
- Surveys major issues in Puerto Rican society from the late 1800s to the present as represented in major literary texts from the five literary genres: novel, short story, drama, poetry, and essay. Class, gender, race, and ethnicity are the major topics that inform class readings and discussions. The course’s goal is to discover and define what is la puertorriqueñidad.

#### LLS 404 Havana: City and Culture
- Credits: 3
- Prerequisites: None
- Corequisites: None
- Type: LEC
- An interdisciplinary course that examines Havana’s urban development, from the sixteenth century to the present, as a process that has produced not only a city of universal projections but also a complex symbolic universe that speaks of the struggles and aspirations of its citizenry. Looks at Havana as a complex spatial phenomenon and gives students the basic background they need to understand fundamental political problems in Cuba’s history and the intricacies of its socioracial environment.
Learning Center

ULC 147 Intermediate Algebra
Credits: 4
Prerequisites: ULC 147 or equivalent
Corequisites: None
Type: LEC
Reviews precalculus algebra and trigonometry, emphasizing functions (transformation, combinations, and composite functions). Topics include graphing and applications of linear, inverse, quadratic, polynomial and rational functions; limits and the derivatives; exponential and logarithmic functions and applications; and trigonometric functions emphasizing sine and cosine.

ULC 148 Algebra and Trigonometry
Credits: 4
Prerequisites: None
Corequisites: None
Type: LEC
Introduces students to proper research skills and procedures for collecting and reorganizing information into a well-written report. Teaches students a basic method of writing a research paper.

ULC 257 Research and Library Skills
Credits: 2
Prerequisites: None
Corequisites: None
Type: LEC
Provides students the necessary skills for life-long learning. Focuses on selecting research topics, locating appropriate materials, analyzing information sources and synthesizing information. Also addressed are the issues of intellectual freedom, plagiarism and copyright. Successful completion of the course fulfills the Library Skills Workbook requirement.

ULC 258 Vocabulary Development and Flexible Reading
Credits: 3
Prerequisites: ULC 147 or equivalent
Corequisites: None
Type: LEC
Helps writers grasp the fundamentals of standard written English. Concentrates on expository essay writing for diverse audiences. Instruction initially emphasizes focus development, content generation, and organization. Sentence structure and grammar are also a focus. Expands students to revise their work extensively. One-on-one conferences and small-group feedback sessions are a regular part of the classroom setting.

ULC 252 Writing the Research Paper
Credits: 3
Prerequisites: ENG 101, ESL 408, or ULC 212
Corequisites: None
Type: LEC
Writing research and term papers is a primary activity during a student's four years of college. Introduces students to proper research skills and procedures for collecting and reorganizing information into a well-written report. Teaches students a basic method of writing a research paper.

Legal Studies

JLS 130 American Jury Trials
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Analyzes the American jury trial by examining its various phases. Reveals the practical aspects of civil and criminal litigation. A major portion of the syllabus is devoted to pre- and post-trial strategies that may profoundly affect a case's judicial disposition, and to understanding how and why the legal system resolves a surprisingly small percentage of controversies by jury trials. Guest lecturers lend their expertise to the course.

JLS 131 The Family and the Law
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines the legal system and the relationships between the judiciary and other parts of our political order, as well as between federal and state governments. Also explores selected issues within the broader social policy areas of individual and civil rights and government regulations.

JLS 132 Local Government Law and Politics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces the structure of local governments, theories of local political decision-making, and laws relating to local decision-makers. Also examines a few specific areas of local concern as case studies to determine whether the decision-making models conform to reality. These areas include public libraries, property taxes, school boards, sewers, and zoning. When appropriate, local decision-makers are invited to speak.

JLS 133 Law and the Consumer
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines the legal system and the relationships between the judiciary and other parts of our political order, as well as between federal and state governments. Also explores selected issues within the broader social policy areas of individual and civil rights and government regulations.
LIN 104 Writing Systems
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Surveys the ways in which natural languages have been, and are today, represented graphically throughout the world. We examine several types of systems (ideographic, logographic, syllabic, and alphabetic) and examine the linguistic principles that underlie each of these systems.

LIN 106 Languages of the World
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Overview of the world's languages: what languages there are, what they are like, how they are similar, and how they are different.

LIN 108 Roots of English
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Word roots in English, their history and development, meanings and combinations, usage and variations. Borrowings into and from English. English as a world language.

LIN 198 Freshman Seminar
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Varies each semester depending on instructor.

LIN 200 Language in Pluralistic America
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Language variation by ethnicity, race, class, gender, and religion in American society. (A cognate equivalent to UGC 211 American Pluralism.)

LIN 205 Introduction to Linguistic Analysis
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces the structure of language (phonetics, phonology, morphology, semantics, and syntax), looking at a broad variety of languages; approaches to linguistic analysis and theory.

LIN 207 Language, Society, and the Individual
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces the functions of language in social groups; the acquisition of language; the relationships among language, thought, and culture; bilingualism and second language teaching.

LIN 275 Languages and Cultures of Native North America
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Expression of meaning and linguistic concepts in a number of native languages of North America.

LIN 301 Structure of English: The Sound System
Credits: 3
Prerequisites: LIN 205
Corequisites: None
Type: LEC
Sound structure of English, including the articulation of sounds, phonological patterns and alternations, and dialects.

LIN 302 Structure of English: Grammar and Lexicon
Credits: 3
Prerequisites: LIN 205
Corequisites: None
Type: LEC
Syntax and morphology of English, including lexical and grammatical categories, basic clause structure, and complex sentences.

LIN 315 Language in its Social Setting
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Analyzes the social basis of conversation: interaction on two levels: the linguistic structures of dialogue and the cultural models underlying interaction.

LIN 320 Language and the Brain
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Localiation and lateralization of language in the brain; aphasia, dyslexia, and other neurolinguistic disorders; developmental neurolinguistics.

LIN 342 Introduction to Cognitive Science
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
An interdisciplinary approach to the understanding of knowledge and mind, guided by principles of formal systems and computation. Concepts and approaches from psychology, philosophy, artificial intelligence, linguistics, and neuroscience.

LIN 345 Natural Language and the Computer
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Natural language applications such as search engines, and speech recognition play an increasingly important role in society. It seems like a very simple process, and yet it is very difficult. This class addresses the problems faced by computers in dealing with human language.

LIN 355 Child Language Development
Credits: 3
Prerequisites: LIN 301 and LIN 30 or permission of instructor
Corequisites: None
Type: LEC
An interdisciplinary approach to the study of the acquisition of the structure and function of a child's native language. Relationships among the development of language, cognition, biology, and social interaction.

LIN 356 An Introduction to Contemporary Theories of Metaphor
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
General overview of the analysis of metaphors and analogy from a linguistic and cognitive perspective.

LIN 402 Phonology Practicum
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Analyzing the sound systems of diverse languages.

LIN 405 Bilingualism and Language Contact
Credits: 3
Prerequisites: LIN 205 or permission of instructor
Corequisites: None
Type: LEC
Linguistic, psychological, educational, and sociocultural characteristics of bilingualism, multilingualism, and language contact.

LIN 406 Meaning Communication
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Focuses on social and referential aspects of human communication.

LIN 410 Morphology
Credits: 3
Prerequisites: LIN 302 or permission of instructor
Corequisites: None
Type: LEC
Structure of words; different theoretical approaches to the analysis of morphemes, words, and idioms.

LIN 413 Language and Cognition
Credits: 3
Prerequisites: LIN 205 and LIN 207, or permission of instructor
Corequisites: None
Type: LEC
Examines classificatory phenomena in lexical and grammatical structure from a cross-linguistic perspective, focusing on African, European, East Asian, and Native American languages.

LIN 414 History of the English Language
Credits: 4
Prerequisites: None
Corequisites: None
Type: SEM
Introduces the linguistic and cultural development of the English language from its beginnings to the present.

LIN 415 Syntax I
Credits: 3
Prerequisites: LIN 205
Corequisites: None
Type: LEC
Fundamentals of syntactic analysis, applied to data from a wide range of languages. Briefly introduces syntactic theory.

LIN 417 Psycholinguistics
Credits: 3
Prerequisites: LIN 205 and LIN 207, or permission of instructor
Corequisites: None
Type: LEC
Psycholinguistic processes involved in producing and comprehending language, including speech sounds, meaning, lexicon, syntax, discourse, and literacy.
LIN 21 Linguistic Anthropology
Credits: 3
Prerequisites: LIN 207 or permission of instructor
Corequisites: None
Type: LEC
Relationship between language and culture cross-culturally from the point of view of linguistic anthropology. Relies on primary readings, looking both at descriptive studies of particular languages and cultures, and theoretical issues, specifically the Linguistic Relativity Hypothesis.

LIN 425 Typology and Universals
Credits: 3
Prerequisites: LIN 302 or LIN 415
Corequisites: None
Type: LEC
Ways in which languages are similar to and different from each other, including morphological categories, word order, case marking, and grammatical relations.

LIN 426 Comparative Syntactic Theories
Credits: 3
Prerequisites: LIN 415
Corequisites: None
Type: LEC
The objective of the proposed course is to offer a survey of important modern (i.e. post-1950) approaches to syntactic theory. Theoretical models to be covered include various transformationalist approaches, Head-drive Phrase Structure Grammar, Lexical Functional Grammar, Role and Reference Grammar, and typological and functional approaches. The leading ideas of each theoretical framework will be presented, and the frameworks will be compared and contrasted with each other, both in terms of the overall models they adopt and in how they use linguistic data to support their models.

LIN 430 Phonology I
Credits: 3
Prerequisites: LIN 205
Corequisites: None
Type: LEC
Thorough grounding in phonological analysis, using data from a wide variety of languages. Briefly introduces phonological theory.

LIN 432 Phonology II
Credits: 3
Prerequisites: LIN 432
Corequisites: None
Type: LEC
Current developments in phonological theory, including derivational and non-derivational approaches.

LIN 434 Syntax II
Credits: 3
Prerequisites: LIN 415
Corequisites: None
Type: LEC
Introduces contemporary syntactic theory, including generative and non-generative approaches.

LIN 437 The Syntax of Romance
Credits: 3
Prerequisites: Permission of instructor, LIN 415 or any other syntax course is recommended
Corequisites: None
Type: LEC
Introduces the syntactic structure of Romance languages, what makes them similar (and distinct from other Indo-European language families, e.g. Germanic languages like English) and how they differ from each other. Languages covered include Catalan, French, Italian, Portuguese, Romanian, and Spanish.

LIN 438 Semantics
Credits: 3
Prerequisites: LIN 205
Corequisites: None
Type: LEC
Introduces basic concepts and methods in the analysis of natural language meaning.

LIN 439 Historical Linguistics
Credits: 3
Prerequisites: LIN 432 or permission of instructor
Corequisites: None
Type: LEC
Language change, the divergence and convergence of dialects and languages in time and space, and linguistic reconstruction.

LIN 443 Semantics II
Credits: 3
Prerequisites: LIN 415 or permission of instructor
Corequisites: None
Type: LEC
Introduces the description of the meaning of sentences; focuses on how the meaning of sentences is built from the meaning of individual words.

LIN 448 Formal Semantics
Credits: 3
Prerequisites: LIN 415, LIN 443, or permission of instructor
Corequisites: None
Type: LEC
Surveys formal approaches to the study of meaning.

LIN 455 Language Acquisition
Credits: 3
Prerequisites: LIN 301 and LIN 302; or LIN 432 and LIN 415
Corequisites: None
Type: LEC
Surveys the child’s linguistic development, primarily in phonology, morphology, syntax, semantics, and discourse; current controversies in acquisition theory.

LIN 465 Introduction to Dialectology
Credits: 3
Prerequisites: LIN 432 or equivalent
Corequisites: None
Type: LEC
Dialect in its diachronic and synchronic manifestations; social and regional variation; languages in contact; linguistic fieldwork.

LIN 467 Computational Linguistics
Credits: 3
Prerequisites: permission of instructor
Corequisites: None
Type: LEC
Introduces the field of computational linguistics, which is concerned with the understanding and use of language by computers.

LIN 481 Cognitive Foundations of Language
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Explores the meanings of grammatical elements across languages in order to understand the fundamental conceptual structure of language in general.

LIN 495 Supervised Teaching
Credits: 3
Prerequisites: Junior standing & Linguistics Major or permission of instructor
Corequisites: None
Type: TUT
For undergraduate teaching assistants.

LIN 496 Internship
Credits: 2
Prerequisites: None
Corequisites: None
Type: TUT
Language teaching experience either in a UB department (Linguistics, a language department, English Language Institute, etc.), in the Buffalo public schools, or at a public service agency (International Institute of Buffalo, Herman Badillo Institute, Literacy Volunteers, etc.). Open to majors and non-majors. Apply to director of undergraduate studies.

LIN 497 Honors Thesis
Credits: 3
Prerequisites: None
Corequisites: None
Type: TUT
Guidance in, and supervision of, the preparation of a research essay required to complete a degree with honors. Apply to director of undergraduate studies.

LIN 498 Senior Seminar
Credits: 3
Prerequisites: permission of instructor
Corequisites: None
Type: TUT
Advanced seminar on a special topic of linguistics research.

LIN 499 Independent Study
Credits: 1
Prerequisites: None
Corequisites: None
Type: TUT
Apply to director of undergraduate studies.
### Mathematics

#### MTH 115 Survey of Algebra and Trigonometry

| Credits: 4 |
| arbitrary value, inequalities, exponents, radicals, polynomials, rational expressions, solving systems of linear equations, quadratic equations and inequalities, functions (rational, logarithmic, exponential, trigonometric), graphing, trigonometric identities. Emphasizes applications to problems. This fast-paced course reviews Course III and prepares students for further courses in mathematics. Students with three years of high school math but with weak algebra skills should take ULC 147 before MTH 115. Students who have had only two years of high school mathematics may take MTH 115, or may prefer to take a two-semester sequence covering this material more thoroughly and at a more moderate pace: ULC 147 and ULC 148. |
| Corequisites: None |
| Type: LEC/LAB |
| Prerequisites: two years of NYS Regents-level high school mathematics |
| Credits: 3 |

#### MTH 172 Principles of Mathematical Computing

| Credits: 4 |
| Emphasizes proofs and concepts of calculus. |
| Corequisites: None |
| Prerequisites: MTH 14 with grade of C or higher |
| Credits: 4 |

#### MTH 173 Principles of Mathematical Computing II

| Credits: 4 |
| Continuation of MTH 172. Discusses necessary matrix and numerical perspectives as well as an introduction to - and 3-D space. |
| Corequisites: None |
| Prerequisites: permission of instructor |
| Credits: 4 |

#### MTH 174 Principles of Mathematical Computing III

| Credits: 4 |
| Further development of the geometric interpretation of solutions. |
| Corequisites: None |
| Prerequisites: MTH 14 with grade of C or higher |
| Credits: 4 |

#### MTH 191 Introduction to Discrete Mathematics I

| Credits: 4 |
| Emphasizes proofs and concepts of calculus. |
| Corequisites: None |
| Prerequisites: MTH 141 with grade of C or higher |
| Credits: 4 |

#### MTH 192 Introduction to Discrete Mathematics II

| Credits: 4 |
| Continuation of MTH 191. Topics include sets, relations, functions, mathematical induction, fundamental counting methods, difference equations, and sequences and series. |
| Corequisites: None |
| Prerequisites: MTH 115 with grade of C or higher |
| Credits: 4 |

#### MTH 241 College Calculus III

| Credits: 4 |
| Provides the mathematical foundations for the study of computer science. Also approved for mathematics majors in Concentration GS/ED. Topics include sets, relations, functions, mathematical induction, fundamental counting methods, difference equations, and sequences and series. |
| Corequisites: None |
| Prerequisites: permission of instructor |
| Credits: 4 |

#### MTH 242 College Calculus III

| Credits: 4 |
| Further development of the geometric interpretation of solutions. |
| Corequisites: None |
| Prerequisites: MTH 14 with grade of C or higher |
| Credits: 4 |

#### MTH 251 Honors Calculus III

| Credits: 4 |
| Continuation of MTH 241. Further development of the geometric interpretation of solutions. |
| Corequisites: None |
| Prerequisites: permission of instructor |
| Credits: 4 |

#### MTH 272 Mathematics of Data Manipulation

| Credits: 4 |
| Analytic solutions, qualitative behavior of solutions to differential equations. First-order and higher-order ordinary differential equations, including nonlinear equations. Covers analytic, geometric, and numerical perspectives as well as an interplay between methods and model problems. Discusses necessary matrix theory and explores differential equation models of phenomena from various disciplines. Uses a mathematical software system designed to aid in the numerical and qualitative study of solutions, and in the geometric interpretation of solutions. |
| Corequisites: None |
| Prerequisites: MTH 142 with grade of C or higher |
| Credits: 4 |
MTH 310 Applications of Linear Algebra
Credits: 4
Prerequisites: MTH 306, MTH 309 with grades of C or higher
Corequisites: None
Type: LEC/LAB
Topics selected by the instructor.

MTH 311 Introduction to Higher Mathematics
Credits: 4
Prerequisites: MTH 241 with grade of C or higher
Corequisites: None
Type: LEC/LAB
Develops the student’s ability to read, comprehend and construct rigorous proofs. Topics may include the following: the number systems N, Z, Q, R and the existence of irrational numbers; sets and functions; size of sets (finite/infinite, countable/uncountable); the countability of the rationals and the uncountability of the real numbers; boundedness; upper and lower bounds; lub and glb; lub and glb property; density of the rationals in the reals; Archimedean property of the reals; mathematical induction, including strong induction and the well-ordering of the natural numbers; sequences of real numbers, including the Monotone Convergence Theorem, Cauchy sequences, and the Bolzano-Weierstrass Theorem.

MTH 313 Elements of Set Theory
Credits: 4
Prerequisites: MTH 241 with grade of C or higher or permission of instructor
Corequisites: None
Type: LEC/LAB
Cardinals, ordinals, order-types, and operations on them. Axiom of choice. Sets.

MTH 314 Logic for Computer Science
Credits: 3
Prerequisites: at least one year of previous training in college mathematics and one year of programming
Corequisites: None
Type: LEC
Introduces predicate calculus, emphasizing proof theory rather than model theory. Gives some programming exercises.

MTH 335 Elements of Geometry
Credits: 4
Prerequisites: MTH 311, MTH 309 with grades of C or higher
Corequisites: None
Type: LEC/LAB
Euclidean and non-Euclidean geometries. Studies the Hilbert postulates and various models, emphasizing Euclidean and Lobachevskian geometries.

MTH 336 Projective Geometry
Credits: 4
Prerequisites: MTH 241 with grade of C or higher or permission of instructor
Corequisites: None
Type: LEC
Projective geometry is both a generalization and a simplification of familiar Euclidean geometry, omitting concepts of distance and angle. The small set of axioms has an important duality property. There are several famous theorems relating figures in the plane. May consider Three-D geometry and specialization to Euclidean and other geometries, as time permits. Requires no previous geometry.

MTH 337 Introduction to Scientific and Mathematical Computing
Credits: 4
Prerequisites: MTH 141, MTH 142 with grade of C or higher
Corequisites: None
Type: LEC/LAB
Computing now plays an essential and ever-expanding role in science and mathematics. This course provides a broad introduction to computing in the sciences and in both abstract and applied mathematics. It is accessible to students early in their undergraduate program, thereby opening the door to the profitable use of computation throughout the junior and senior years.

MTH 343 Codes
Credits: 3
Prerequisites: MTH 309 with grade of C or higher
Corequisites: None
Type: LEC/LAB
Studies the characteristics and mathematical foundations of several codes widely used in information handling for data compression, error detection, error correction and other special purposes. The codes studied include binary, comma-free, cryptographic, cyclic, Hamming, and Huffman.

MTH 353 Introduction to Combinatorics I
Credits: 3
Prerequisites: MTH 241 with grade of C or higher
Corequisites: None
Type: LEC
Permutations, combinations, and other problems of selecting and arranging objects subject to various restrictions; generating functions; recurrence relations; inclusion-exclusion theorem.

MTH 354 Introduction to Combinatorics II
Credits: 3
Prerequisites: MTH 241 with grade of C or higher
Corequisites: None
Type: LEC
Topics in finite rings and algebraic number theory.

MTH 355 Elements of Number Theory
Credits: 3
Prerequisites: MTH 241 with grade of C or higher
Corequisites: None
Type: LEC
Gödel's incompleteness theorem; decidability and recursiveness; consistency problems.

MTH 357 Elementary Differential Equations
Credits: 3
Prerequisites: MTH 141-MTH 142 or equivalent with grades of C or higher
Corequisites: None
Type: LEC/LAB
Surveys elementary differential equations of physics; separation of variables and superposition of solutions; orthogonal functions and Fourier series. Introduces boundary value problems, Fourier and Laplace transforms.

MTH 412 Introduction to Statistical Inference
Credits: 4
Prerequisites: MTH 411 with a grade of C or higher or permission of instructor
Corequisites: None
Type: LEC/LAB
Introduces the basic concepts of probability theory and addresses many concrete problems. A list of basic concepts includes axioms of probability; conditional probability; independence; random variables (continuous and discrete); distribution functions, expectation, variance, joint distribution functions, limit theorems.

MTH 413 Introduction to Algebra I
Credits: 4
Prerequisites: MTH 309 with grade of C or higher
Corequisites: None
Type: LEC
Number theory.

MTH 414 Introduction to Mathematical Logic I
Credits: 3
Prerequisites: MTH 314 or MTH 413 with grade of C or higher
Corequisites: None
Type: LEC
Gödel's incompleteness theorem; decidability and recursiveness; consistency problems.

MTH 417 Survey of Multivariable Calculus
Credits: 3
Prerequisites: MTH 241 with grade of C or higher
Corequisites: None
Type: LEC/LAB
For math majors in Concentration C, and majors of science and engineering. Surveys functions of several variables; differentiation, composite, and implicit functions; critical points; line integrals; Green's theorem; vector field theory; gradient, divergence, and curl; integral theorems. Introduces functions of a complex variable; curves and regions in the complex plane; analytic functions, Cauchy-Riemann equations, Cauchy integral formula. Applications.

MTH 418 Survey of Partial Differential Equations
Credits: 4
Prerequisites: MTH 306 with grade of C or higher
Corequisites: None
Type: LEC/LAB
Surveys elementary differential equations of physics; separation of variables and superposition of solutions; orthogonal functions and Fourier series. Introduces boundary value problems, Fourier and Laplace transforms.

MTH 419 Introduction to Algebra II
Credits: 4
Prerequisites: MTH 309 with grade of C or higher
Corequisites: None
Type: LEC
Topics in finite rings and algebraic number theory.

MTH 420 Introduction to Algebra III
Credits: 4
Prerequisites: MTH 309 with grade of C or higher
Corequisites: None
Type: LEC
Topics in advanced linear algebra.
MTH 424 Survey of Fourier Series Methods
Credits: 3
Prerequisites: MTH 431 with grade of C or higher or permission of instructor
Corequisites: None
Type: LEC
For mathematics, science, and engineering majors with strong mathematics backgrounds. Theory of Fourier series and transforms, orthogonal sets, special functions, applications.

MTH 425 Introduction to Complex Variables I
Credits: 3
Prerequisites: MTH 241 with grade of C or higher
Corequisites: None
Type: LEC
For students of physics, electrical and other areas of engineering, and mathematics. Analyticity; calculus over the complex numbers. Cauchy theorems, residues, singularities, conformal mapping. Weierstrass convergence theorem; analytic continuation.

MTH 426 Introduction to Complex Variables II
Credits: 3
Prerequisites: MTH 425 with grade of C or higher
Corequisites: None
Type: LEC
Continuation of MTH 425. Weierstrass and Mittag-Leffler theorems, harmonic functions, conformal mapping and Green's function, analytic equivalence, and Riemann's mapping theorem. Montel's theorem, external mappings.

MTH 427 Introduction to Topology I
Credits: 3
Prerequisites: MTH 431 with grade of C or higher
Corequisites: None
Type: LEC
Abstract topological spaces, bases, convergence, filters, and nets; separation axioms, continuity, and homeomorphisms; connectedness, separability, compactness.

MTH 428 Introduction to Topology II
Credits: 3
Prerequisites: MTH 427 with grade of C or higher
Corequisites: None
Type: LEC
Continuation of MTH 427. Product and quotient topologies; compactification; complete semi-metric spaces; metrization; topological algebra. Applies results to such fields as differential equations, numerical analysis, probability theory.

MTH 429 Introduction to the Theory of Numbers I
Credits: 3
Prerequisites: MTH 419 with grade of C or higher
Corequisites: None
Type: LEC
The Euclidean algorithm and unique factorization; arithmetical functions; congruences, reduced residue systems; primitive roots; certain diophantine equations.

MTH 430 Introduction to the Theory of Numbers II
Credits: 3
Prerequisites: MTH 429 with grade of C or higher
Corequisites: None
Type: LEC
Continuation of MTH 429. Irrational numbers; continued fractions from a geometric viewpoint; best rational approximations to real numbers; the Fermat-Pell equation; quadratic fields and analysis. Applications to diophantine equations.

MTH 431 Introduction to Real Variables I
Credits: 4
Prerequisites: MTH 311 with grade of C or higher
Corequisites: None
Type: LEC/LAB
Comprehensive and rigorous course in the study of real valued functions of one real variable. Topics include sequences of numbers, limits and the Cauchy criterion, continuous functions, differentiation, inverse function theorem, Riemann integration, sequences and series, uniform convergence. A prerequisite for most advanced courses in analysis.

MTH 432 Introduction to Real Variables II
Credits: 4
Prerequisites: MTH 431 with grade of C or higher
Corequisites: None
Type: LEC/LAB
Rigorous course in analyzing dimensions greater than one. Includes details of three basic theorems: the inverse function theorem, the implicit function theorem, and the change of variables theorem in multiple integrals. Topics include continuously differentiable functions, the chain rule, inverse and implicit function theorems, Riemann integration, partitions of unity, change of variables theorem.

MTH 434 Basic Measure Theory
Credits: 3
Prerequisites: MTH 431 with grade of C or higher or permission of instructor
Corequisites: None
Type: LEC/LAB
The real numbers, the extended numbers and their topologies, the Lebesgue outer measure, measurable sets and Lebesgue measure, nonmeasurable sets, measurable functions. Egoroff's Theorem and Lusin's Theorem. Riemann integral, the Lebesgue integral and the convergence theorems. Differentiation of functions of bounded variation, absolute continuity. The Lp spaces.

MTH 435 Introduction to Cryptography
Credits: 4
Prerequisites: MTH 419 or MTH 429 with grade of C or higher
Corequisites: None
Type: LEC
Explains the basics of cryptography, which is the systematic study of methods of concealing messages from people who are not authorized to read them. Topics include the following: cryptosystem definitions and basic types of attack; substitution ciphers, Hill ciphers; congruences and modular exponentiation; digital encryption standard; public key and RSA cryptosystems; pseudoprimes and primality testing; Pollard rho method; basic finite field theory; discrete log; and digital signatures.

MTH 437 Introduction to Numerical Analysis I
Credits: 4
Prerequisites: CSE 113 or CSE 115; MTH 241, MTH 306, MTH 309 with grades of C or higher
Corequisites: None
Type: LEC/LAB
First part of a 2-semester sequence which explores the design and implementation of numerical methods to solve the most common types of problems arising in science and engineering. Most such problems cannot be solved in terms of a closed analytical formula, but many can be handled with numerical methods learned in this course. Topics for the two semesters include: how a computer does arithmetic, solving systems of simultaneous linear or nonlinear equations, finding eigenvalues and eigenvectors of (large) matrices, minimizing a function of many variables, fitting smooth functions to data points (interpolation and regression), computing integrals, solving ordinary differential equations (initial and boundary value problems), and solving partial differential equations of elliptic, parabolic, and hyperbolic types. We study how and why numerical methods work, and also their errors and limitations. Students gain practical experience through course projects that entail writing computer programs.

MTH 438 Introduction to Numerical Analysis II
Credits: 4
Prerequisites: MTH 437 or CSE 437 with grade of C or higher
Corequisites: None
Type: LEC/LAB
Second part of the 2-semester sequence described under MTH 437.

MTH 443 Fundamentals of Applied Mathematics I
Credits: 4
Prerequisites: MTH 306 with grade of C or higher
Corequisites: None
Type: LEC
Mathematical formulation and analysis of models for phenomena in the natural sciences. Includes derivation of relevant differential equations from conservation laws and constitutive relations. Potential topics include diffusion, stationary solutions, traveling waves, linear stability analysis, scaling and dimensional analysis, perturbation methods, variational and phase-space methods, kinematics, and laws of motion for continuous media. Examples from areas might include, but are not confined to, biology, fluid dynamics, elasticity, chemistry, astrophysics, geophysics.

MTH 444 Fundamentals of Applied Mathematics II
Credits: 4
Prerequisites: MTH 306 with grade of C or higher
Corequisites: None
Type: LEC
Explores other topics described in MTH 443.

MTH 455 Mathematical Modeling
Credits: 3
Prerequisites: MTH 306, MTH 309 with grades of C or higher
Corequisites: None
Type: LEC
Introduces the use of mathematical modeling in applied mathematics using a case study approach. Population ecology; chemical kinetics; traffic dynamics.

MTH 456 The Mathematics of Voting
Credits: 3
Prerequisites: Junior or senior standing
Corequisites: None
Type: LEC
Introduces the mathematical theory of voting—the systemic analysis of the ways to determine a choice of a group from the choices of individuals within a group—with applications to economics and politics. Examines voting procedures including the standard plurality vote, the Borda count, Condorcet's method, and run-off elections. Provides an understanding of how different procedures effect group decisions. Uses convex geometry in the plane and in three spaces. Also discusses political power.
MTH 457 Problem Solving Seminar
Credits: 3
Prerequisites: MTH 306, MTH 411 and some experience with specific programming; minimum grades of B in these courses
Corequisites: None
Type: LEC
Open discussion and solving of a series of quantitatively based problems involving both individual and student team efforts. Central to the active and cooperative learning experience is communicating results via carefully written technical reports and oral presentations. Analytic, geometric, and numerical problem solving techniques may all be used.

MTH 458 Mathematical Finance
Credits: 3
Prerequisites: MTH 241, MTH 306, MTH 309 with grades of C or higher
Corequisites: None
Type: LEC
Introduces the mathematical theory and computation of modern financial products used in the banking and corporate world. Derives and analyzes mathematical models for the valuation of derivative products.

MTH 459 Mathematical Finance 2
Credits: 3
Prerequisites: MTH 458 with grade of C or higher
Corequisites: None
Type: LEC
Describes the mathematical development of both the theoretical and the computational techniques used to analyze financial instruments. Specific topics include utility functions; forwards, futures, and swaps; and modeling of derivatives and rigorous mathematical analysis of the models, both theoretically and computationally. Develops, as needed, the required ideas from partial differential equations and numerical analysis.

MTH 460 Theory of Games
Credits: 4
Prerequisites: MTH 241, MTH 309 with grades of C or higher; or permission of instructor
Corequisites: None
Type: LEC/LAB
Introduces the mathematical theory of games—a systematic approach to modeling conflict, cooperation, and negotiation—with applications to mathematics, economics, politics, and evolutionary biology. A game, in mathematical terms, consists of a starting point and various choices made by ‘players.’ Each choice might lead to new choices or to an outcome that ends the game. Some choices might be random; some might be made without full information about what has transpired. The players are each trying to maximize their own payoff, but the play of each might influence the results of the others.

The approaches Game Theory uses to analyze conflict between two or more people lead to results that can seem paradoxical as well as illuminating. The most important thing a student can take from this course is a useful way of approaching decisions, from the trivial—how does a couple decide which movie to see—to the critical—how should countries pursue their goals in cooperation or conflict with their allies and enemies. Partial list of topics: Prisoner’s Dilemma, game trees, pure and mixed strategies, backward induction, normal form, Nash equilibrium, chance moves, utility functions, domination, convexity, payoff regions, strictly competitive games, separating hyperplanes, repeating games, and cooperative bargaining theory.

MTH 461 Topics in Algebra
Credits: 3
Prerequisites: permission of instructor
Corequisites: None
Type: LEC
Treats problems, methods, and recent developments pertaining to algebra. Topics courses can be taken more than once for credit.

MTH 462 Topics in Combinatorial Analysis
Credits: 3
Prerequisites: permission of instructor
Corequisites: None
Type: LEC
Treats problems, methods, and recent developments pertaining combinatorial analysis. Topics courses can be taken more than once for credit.

MTH 463 Topics in Applied Mathematics
Credits: 3
Prerequisites: permission of instructor
Corequisites: None
Type: LEC
Treats problems, methods, and recent developments pertaining applied mathematics. Topics courses can be taken more than once for credit.

MTH 464 Topics in Combinatorial Analysis
Credits: 3
Prerequisites: permission of instructor
Corequisites: None
Type: LEC
Treats problems, methods, and recent developments pertaining combinatorial analysis. Topics courses can be taken more than once for credit.

MTH 465 Lectures in Geometry
Credits: 3
Prerequisites: permission of instructor
Corequisites: None
Type: LEC
Provides a broader understanding of differential geometry. Comprehensively introduces the theory of curves and surfaces in space. Moves toward the goal of viewing surfaces as special concrete examples of differentiable manifolds, reached by studying surfaces using tools that are basic to studying manifolds. Topics include curves in 3-D space, differential forms, Frenet formulae, patch computations, curvature, isometries, intrinsic geometry of surfaces. Serves as an introduction to more advanced courses involving differentiable manifolds.

MTH 466 Topics in Logic and Set Theory
Credits: 3
Prerequisites: permission of instructor
Corequisites: None
Type: LEC
Treats problems, methods, and recent developments pertaining logic and set theory. Topics courses can be taken more than once for credit.

MTH 467 Topics in Number Theory
Credits: 3
Prerequisites: permission of instructor
Corequisites: None
Type: LEC
Treats problems, methods, and recent developments pertaining number theory. Topics courses can be taken more than once for credit.

MTH 468 Topics in Numerical Analysis
Credits: 3
Prerequisites: permission of instructor
Corequisites: None
Type: LEC
Treats problems, methods, and recent developments pertaining numerical analysis. Topics courses can be taken more than once for credit.

MTH 469 Topics in Topology
Credits: 3
Prerequisites: permission of instructor
Corequisites: None
Type: LEC
Treats problems, methods, and recent developments pertaining topology. Topics courses can be taken more than once for credit.

MTH 470 Topics in Mathematics
Credits: 3
Prerequisites: variable (set by instructor)
Corequisites: None
Type: LEC
Treats problems, methods, and recent developments in any area of mathematics that does not fit nearly or fully under the title of any other “Topics in…” course.

MTH 496 Internship in Mathematics
Credits: 1
Prerequisites: Accepted math major, junior/senior standing with a minimum of 24 credits in mathematics, permission of director of undergraduate studies
Corequisites: None
Type: TUT
Students get field experience in mathematical employment, in business, industry or education, working under the joint supervision of an off-campus supervisor and a university faculty member, usually the director of undergraduate studies. May be taken once only.

MTH 497 Honors Thesis in Mathematics
Credits: 4
Prerequisites: math major seeking honors degree in mathematics
Corequisites: None
Type: TUT
Open only to math majors intending to seek an honors degree in mathematics. For information, consult the director of undergraduate studies in the Department of Mathematics.

MTH 499 Independent Study
Credits: 1
Prerequisites: None
Corequisites: None
Type: TUT
Individual study arranged between student and faculty member in an area of mathematics of particular interest to the student.
**Mechanical Engineering**

**MAE 177 Introduction to Engineering Drawing and CAD**

- **Credits:** 2
- **Prerequisites:** None
- **Corequisites:** None
- **Type:** LEC/LAB

Provides a first exposure to mechanical design for engineers. Includes the nature and visual representation of mechanical components and principles of engineering drawing and sketching for mechanical design. Utilizes up-to-date computer-aided design software (such as AutoCad) for mechanical drawings and mechanical designs.

**MAE 204 Thermodynamics I**

- **Credits:** 3
- **Prerequisites:** MTH 142 or equivalent
- **Corequisites:** None
- **Type:** LEC/REC

Covers conservation of mass, first and second laws of thermodynamics, thermodynamic properties, equilibrium, and their application to physical and chemical systems.

**MAE 277 Introduction to Mechanical and Aerospace Engineering Practice**

- **Credits:** 3
- **Prerequisites:** EAS 140
- **Corequisites:** MAE 177
- **Type:** LEC

An overview of engineering in industry; introduces engineering design concepts, reverse engineering, case studies including a hands-on product design project, basic of manufacturing processes, elementary modeling of engineering systems, and technical communications. Students who have completed MAE 311, MAE 364, or MAE 377 should see the Director of Undergraduate Studies to select an alternative course.

**MAE 311 Machines and Mechanisms I**

- **Credits:** 3
- **Prerequisites:** EAS 209
- **Corequisites:** MAE 381
- **Type:** LEC

Examines analysis and design of machine elements; including theories of failure, fatigue strength, and endurance limits; fluctuating stresses; Goodman diagram; and fatigue design under torsional and combined stresses. Also covers design of bolted connections, fasteners, welds, springs, ball and roller bearings, journal bearings, gears, clutches, and brakes.

**MAE 334 Introduction to Instrumentation and Computers**

- **Credits:** 3
- **Prerequisites:** EAS 209
- **Corequisites:** EE 200
- **Type:** LEC/LAB

Introduces data acquisition using A/D converters. Theory of A/D and D/A converters, fundamentals and examples of transducers used for mechanical measurements, static and dynamic response, amplifiers, theory of A/D and D/A converters, error analysis, elementary statistics. Two lectures and one three-hour laboratory weekly.

**MAE 335 Fluid Mechanics**

- **Credits:** 3
- **Prerequisites:** EAS 209
- **Corequisites:** MAE 204
- **Type:** LEC

Introduces the transport of heat by conduction, convection, and radiation. Topics include heat transfer, fluids, and heat exchangers and transfers.

**MAE 336 Heat Transfer**

- **Credits:** 3
- **Prerequisites:** EAS 209, MAE 204
- **Corequisites:** None
- **Type:** LEC

Introduces the theory of heat transfer in machinery; including linkages, geometry of motion, mobility, cam design, gear trains, and computing mechanisms. Also covers velocity and acceleration analysis by graphical, analytical, and numerical techniques; static and dynamic force analysis in machinery; engine analysis; flywheels; and balancing.

**MAE 338 Fluid and Heat Transfer Laboratory**

- **Credits:** 1
- **Prerequisites:** MAE 335, MAE 336
- **Corequisites:** None
- **Type:** LAB

Complements coursework in fluid mechanics and heat transfer.

**MAE 340 Systems Analysis**

- **Credits:** 4
- **Prerequisites:** EAS 208, MAE 334
- **Corequisites:** MAE 376
- **Type:** LEC/LAB

Examines mechanical design of functional, pragmatic products from inception through implementation, including topics in computer-aided-design (CAD). Discusses the design process in the context of product redesign assignments using CAD. Includes a final design project with professional documentation including sketches, detailed and assembly CAD drawings, a comprehensive written design analysis, and cost breakdown.

**MAE 341 Engineering Materials**

- **Credits:** 3
- **Prerequisites:** CHE 107
- **Corequisites:** EAS 209
- **Type:** LEC

Introduces the physics and chemistry of engineering materials including metals, ceramics, polymers, and composites. Covers the relationships among the processing, internal structure, material properties, and applications. Internal structure includes crystal structure, imperfections, and phases. Processing includes annealing, precipitation hardening, and heat treatment of steel. Properties include mechanical properties and corrosion behavior. Also considers current industrial needs.

**MAE 352 Advanced Fluid Mechanics**

- **Credits:** 3
- **Prerequisites:** MAE 351
- **Corequisites:** None
- **Type:** LEC

Examines the theory of fluid mechanics, including fluid statics, kinematics, and dynamics of fluids; boundary-layer theory and turbulence; and the behavior of fluid flows.

**MAE 353 Fluid Mechanics Laboratory**

- **Credits:** 1
- **Prerequisites:** MAE 352
- **Corequisites:** None
- **Type:** LAB

Includes laboratory equipment and materials to study the properties of fluids and their behavior under different conditions.

**MAE 364 Manufacturing Processes**

- **Credits:** 3
- **Prerequisites:** None
- **Corequisites:** MAE 381
- **Type:** LEC

Examines manufacturing processes including casting, forming, cutting, joining, and molding of various engineering materials. Also covers manufacturing considerations in design including material and process selection, tooling, product quality, and properties/processing tradeoffs. Includes quality control and automation issues.

**MAE 365 Introduction to Engineering Environment**

- **Credits:** 3
- **Prerequisites:** MAE 381
- **Corequisites:** None
- **Type:** LEC/LAB

Studies problem solving techniques and environmental systems, including fluids, heat transfer, and thermodynamics. Covers conservation of mass, energy, and momentum, and their application to physical systems.

**MAE 366 Manufacturing Systems**

- **Credits:** 3
- **Prerequisites:** MAE 364
- **Corequisites:** None
- **Type:** LEC

Examines manufacturing systems, including production planning, material management, quality control, and computer-aided design (CAD). Discusses the design process in the context of product redesign assignments using CAD. Includes a final design project with professional documentation including sketches, detailed and assembly CAD drawings, a comprehensive written design analysis, and cost breakdown.

**MAE 370 Transducers and Measurement Systems**

- **Credits:** 3
- **Prerequisites:** MAE 204
- **Corequisites:** None
- **Type:** LEC

Examines the theory of transducer design and measurement systems, including signal processing, error analysis, and measurement techniques.

**MAE 371 Advanced Manufacturing Systems**

- **Credits:** 3
- **Prerequisites:** MAE 370
- **Corequisites:** None
- **Type:** LEC

Examines advanced manufacturing systems, including robotics, computer-aided design, and computer-aided manufacturing.

**MAE 372 Advanced Manufacturing Systems Laboratory**

- **Credits:** 1
- **Prerequisites:** MAE 371
- **Corequisites:** None
- **Type:** LAB

Includes laboratory equipment and materials to study the properties of fluids and their behavior under different conditions.

**MAE 376 Product Design in a CAD Environment**

- **Credits:** 3
- **Prerequisites:** EAS 209, MAE 377
- **Corequisites:** None
- **Type:** LEC/LAB

Examines the mechanics of mechanical design and analysis, including design for manufacturing considerations in design including material and process selection, tooling, product quality, and properties/processing tradeoffs. Includes quality control and automation issues.

**MAE 377 Product Design in a CAD Environment Laboratory**

- **Credits:** 1
- **Prerequisites:** EAS 209, MAE 377
- **Corequisites:** None
- **Type:** LAB

Includes laboratory equipment and materials to study the properties of fluids and their behavior under different conditions.

**MAE 380 Introduction to Engineering Mechanics**

- **Credits:** 3
- **Prerequisites:** EAS 140
- **Corequisites:** None
- **Type:** LEC

Examines the theory of elastic structural analysis in machinery; including linkages, geometry of motion, mobility, cam design, gear trains, and computing mechanisms. Also covers velocity and acceleration analysis by graphical, analytical, and numerical techniques; static and dynamic force analysis in machinery; engine analysis; flywheels; and balancing.

**MAE 381 Engineering Materials**

- **Credits:** 3
- **Prerequisites:** EAS 209, MAE 376
- **Corequisites:** None
- **Type:** LEC

Examines the mechanics of mechanical design and analysis, including design for manufacturing considerations in design including material and process selection, tooling, product quality, and properties/processing tradeoffs. Includes quality control and automation issues.

**MAE 382 Advanced Manufacturing Systems**

- **Credits:** 3
- **Prerequisites:** MAE 381
- **Corequisites:** None
- **Type:** LEC

Examines advanced manufacturing systems, including robotics, computer-aided design, and computer-aided manufacturing.

**MAE 383 Advanced Manufacturing Systems Laboratory**

- **Credits:** 1
- **Prerequisites:** MAE 382
- **Corequisites:** None
- **Type:** LAB

Includes laboratory equipment and materials to study the properties of fluids and their behavior under different conditions.

**MAE 384 Advanced Manufacturing Systems Laboratory**

- **Credits:** 1
- **Prerequisites:** MAE 383
- **Corequisites:** None
- **Type:** LAB

Includes laboratory equipment and materials to study the properties of fluids and their behavior under different conditions.
MAE 416 Aerospace Structures
Credits: 3
Prerequisites: MAE 415
Corequisites: None
Type: LEC
Explores the theory of light structures; including beam bending, shear stress, shear center, and composite beams; shearflow, warping stresses, and secondary warping; torsion of thin-walled single and multicell tubes; deformation of struts, plates, frames, and trusses; stress analysis of connections; composite structures and sandwich construction. Also covers computer implementation with applications to aircraft and aerospace structures.

MAE 417 Applied Orthopedic Biomechanics
Credits: 3
Prerequisites: EAS 209
Corequisites: None
Type: LEC
Studies the design of implants and prosthetics in relation to the biomechanics of the musculoskeletal system. Topics include bone physiology, testing methods (tension, compression, bending, torsion, shear, and fatigue, including nondestructive testing), strain gage application, composite theory of bone, stress fractures and fatigue properties in the musculoskeletal system, fracture healing, external/internal fixation (Ilizarov, etc.), aging and osteoporosis, pathology of osteoarthritis, joint replacement and arthroplasty, and spin biomechanics.

MAE 420 Biomechanics of the Musculoskeletal System
Credits: 3
Prerequisites: EAS 209
Corequisites: None
Type: LEC
Reviews basic aspects of anatomy, including forces transmitted in the body, bones as structural members, and joint and muscle forces. Also considers kinematics of body motions, instantaneous centers of joint motions, behavior of normal and abnormal joints, remodeling, biomaterials, and ligaments and tendons. Also studies functions of orthotics and prostheses, including design considerations. Involves a weekly seminar and one or two laboratory sessions.

MAE 422 Gas Dynamics
Credits: 3
Prerequisites: MAE 335
Corequisites: None
Type: LEC
Examines fundamentals of gas dynamics and compressible aerodynamics; including one-dimensional isentropic flow, one-dimensional flow with friction and with heating or cooling, and normal shocks. Also explores multidimensional flows, Prandtl-Meyer flow, oblique shocks, small perturbation theory, and supersonic airfoil theory.

MAE 423 Introduction to Propulsion
Credits: 3
Prerequisites: MAE 335
Corequisites: None
Type: LEC
Reviews combustion thermodynamics; flow in nozzle, diffuser, and constant area duct with shock; analysis and performance of air breathing and chemical rocket propulsion systems; performance of single and multi-staged rocket vehicles; and space missions.

MAE 424 Aerodynamics
Credits: 4
Prerequisites: MAE 335
Corequisites: None
Type: LEC/LAB
Examines flow over airfoils and wings; ideal flow theory, singularity solutions, superposition, source, and vortex panel methods; method of source panels; 2-D airfoil theory; pressure distributions and lift; effects of compressibility; finite wings; viscous aerodynamics; boundary-layer theory; and friction drag. Includes an aerodynamics laboratory experience, considering airfoil characteristics, boundary-layer measurements, and jet flow.

MAE 425 Spacecraft Dynamics and Control
Credits: 3
Prerequisites: MAE 376
Corequisites: None
Type: LEC
Introduces the concepts of spacecraft orbital mechanics and attitude dynamics. Orbital mechanics is the study of the positional motion, while attitude dynamics describes the orientation of the spacecraft. Topics include: review of rotational kinematics and dynamics, orbital mechanics, gravity turn and trajectory optimization, orbit lifetimes, three-body problem, orbit perturbations, orbit determination, spacecraft dynamics, spinning and three-axis stabilized spacecraft, and attitude determination.

MAE 426 Analytical Methods
Credits: 3
Prerequisites: MAE 376
Corequisites: None
Type: LEC
Develops solution methods for practical problems in mechanical and aerospace engineering, involving partial differential equations. Explores Fourier series, orthogonal functions, Laplace transforms, examples of partial differential equations (e.g. waves and heat conduction equations), method of separation of variables, and Bessel functions. Also involves an introduction to complex variable theory, and application to potential flow.

MAE 429 Finite Element Techniques
Credits: 3
Prerequisites: MAE 311, MAE 376
Corequisites: None
Type: LEC
Provides a detailed presentation of finite element techniques in the areas of solid mechanics, structures, heat transfer, and fluid flow. Selects applications from mechanical and aerospace engineering. Stresses computer applications.

MAE 431 Energy Systems
Credits: 3
Prerequisites: MAE 204, MAE 335
Corequisites: None
Type: LEC
Continuation of thermodynamics. Studies availability, psychrometrics, real gases, combustion thermochemistry, phase and chemical equilibrium, fuel cells, flow through nozzles, and blade passages.

MAE 434 Aircraft Design
Credits: 3
Prerequisites: MAE 436
Corequisites: None
Type: LEC
Involves practice predicting performance of existing designs with comparison to actual performance; and analyzes performance of new, student-designed aircraft. Conceptual aircraft design for specific mission profiles is facilitated by course-licensed software.

MAE 436 Flight Dynamics
Credits: 3
Prerequisites: MAE 340
Corequisites: None
Type: LEC
Reviews practical aerodynamics of wings and bodies, as well as performance of aircraft and missiles in the atmosphere. Topics include longitudinal, lateral, and directional static stability; control effectiveness; control forces; basic equations of motion of flight vehicles; aerodynamics, thrust and gravity forces; and stability derivatives. Analyzes aircraft and missile dynamic stability, as well as typical model responses to control inputs. Further studies autopilots, stability augmentation, and analysis of the pilot as a control-system element.

MAE 438 Smart Materials
Credits: 3
Prerequisites: MAE 381
Corequisites: None
Type: LEC
Introduces concepts and applications of smart materials, which refer to materials that can sense a certain stimulus and, in some cases, even react to the stimulus in a positive way so as to counteract negative effects of the stimulus. Strain/stress sensors and actuators are emphasized. Topics include intrinsically smart structural materials, piezoelectric and electrostrictive materials, magnetostrictive materials, electroreologhical and magnetorheological fluids, shape memory materials and optical fibers.

MAE 439 Heating, Ventilation, and Air Conditioning
Credits: 3
Prerequisites: MAE 336
Corequisites: None
Type: LEC
Reviews psychrometrics, physiological factors, heating and cooling load calculations, refrigeration methods and applications to air conditioning, cryogenic methods, fan and duct analyses, and solar energy.

MAE 442 Computer-Aided Analysis in Fluid and Thermal Sciences
Credits: 3
Prerequisites: MAE 335, MAE 336, MAE 376
Corequisites: None
Type: LEC
For seniors and beginning graduate students interested in computer-based analysis of engineering problems in fluid mechanics and heat transfer. Emphasizes applications of computer analysis to engineering design of fluid/thermal systems. Surveys the general governing equations and methods to solve them, including finite-difference, finite-volume, panel methods, and finite element methods. Introduces state-of-the-art computer tools for analysis and graphical representation of results. Gives students a broad view of computational fluid mechanics for engineering applications in the fluid/thermal sciences.

MAE 443 Continuous Control System
Credits: 3
Prerequisites: MAE 340
Corequisites: None
Type: LEC
Studies computer modeling and identification of plants to be controlled; use of feedback control systems; design of feedback control laws including P, I, D; block diagrams, transfer functions, and frequency response functions; control system design and analysis in the time domain and frequency domain; computer simulation of control systems; stability analysis using Routh-Hurwitz criterion; design for stability, speed of response, and accuracy; root locus, Bode, and Nyquist plots; compensation strategies; and state space control design and analysis.

MAE 444 Digital Control Systems
Credits: 3
Prerequisites: MAE 443
Corequisites: None
Type: LEC/LAB
Characterizes discrete time systems; analysis of discrete control systems by time-domain and transform techniques; stability analysis ( Jury test, bilinear transformation, Routh stability test); deadbeat controller design; root-locus based controller design; discrete state variable techniques; synthesis of discrete time controllers; engineering consideration of computer controlled systems.
MAE 448 Issues in Concurrent Design

Credits: 3  
Prerequisites: senior standing  
Corequisites: None  
Type: LEC  
Current interest in incorporating quality and manufacturing concerns in the early stages of the design process has resulted in such concepts as concurrent engineering, total quality management, quality function deployment, robust design, Taguchi’s quality functions, teaming approaches for complex design, and many others. The course addresses these concepts, particularly as they pertain to complex engineering design. Investigates industrial case studies and design projects incorporating some or all of the above concepts, provides first-hand experience.

MAE 449 Design of Complex Engineering Systems

Credits: 3  
Prerequisites: senior standing  
Corequisites: None  
Type: LEC  
Applies domain-independent design methods and decision-support theories and tools to the design of large-scale, complex systems. Covers the role of design, decision-making, and open engineering systems in a globally competitive society. Topics include descriptive and prescriptive models of design, decision theory, utility theory, game theory, design of experiments, approximation, and stochastic and deterministic processes.

MAE 451 Design Process and Methods

Credits: 3  
Prerequisites: senior standing  
Corequisites: None  
Type: LEC  
Discusses the fundamental concepts and activities of design processes. Investigates domain-independent topics of design processes. These topics include idea conception, teamwork, quality, experimental design, optimization, and technical communication. In addition, discusses fundamental methods of design, including decision making, conceptual design, cost evaluation, ethics issues, and intellectual property issues, which are investigated through interactive lectures and individual and group exercises.

MAE 454 Road Vehicle Dynamics

Credits: 3  
Prerequisites: MAE 340  
Corequisites: None  
Type: LEC  
Covers the forces and torques generated by tires (under both traction and braking) and by the relative wind; two-wheel and four-wheel models of a vehicle; simplified stability and control of transients; steady-state response to external disturbances; effects of the roll degree of freedom; equations of motion in body-fixed coordinates; lateral load transfer; force-moment analysis; and applications of feedback-control theory to the design of subsystems for improved performance.

MAE 458 Tribology

Credits: 3  
Prerequisites: senior standing or permission of instructor  
Corequisites: None  
Type: LEC  
Explores friction, lubrication, and wear; contact of real surfaces; mechanics of friction; surface failures; boundary lubrication; fluid properties; thin-film lubrication; thick-film lubrication; and bearing and lubricant selection.

MAE 464 Manufacturing Automation

Credits: 3  
Prerequisites: MAE 364  
Corequisites: None  
Type: LEC  
Introduces the theory of automation as related to manufacturing and design integration, including hardware, software, and algorithm issues involved in fast and flexible product development cycles. Studies strategies of automated manufacturing systems; CAD-CAM; and integration, programming, and simulation. Additional topics include Robotics (e.g. applications in welding, material handling, and human intensive processes), Reverse Engineering (e.g. modeling product from laser and CMM data of parts), Virtual Environments (e.g. industrial applications of virtual reality and prototyping), Intelligent Diagnostics (e.g. sensor fusion for machine tool monitoring), Automated Inspection (e.g. computer vision and methods of automated quality control), and Design for Manufacturing (e.g. issues involved in concurrent product development).

MAE 467 Vibration and Shock

Credits: 3  
Prerequisites: MAE 340, MAE 311 or MAE 415  
Corequisites: None  
Type: LEC  
Examines mechanical vibration and shock; including free and forced, periodic, and aperiodic vibration of single-degree and multidegree of freedom systems.

MAE 472 Guidance, Navigation & Control

Credits: 3  
Prerequisites: MAE 340, knowledge of matrix theory  
Corequisites: None  
Type: LEC  
Introduces the concepts of guidance, navigation and control (GN&C) of dynamical vehicles. Guidance equipment and software is first used to compute the vehicle location required to satisfy mission requirements. Navigation then tracks the vehicle’s actual location, and control then transports the vehicle to the required location. Introduces theoretical foundations to perform basic GN&C operations. Topics include review of rotational kinematics and dynamics, orbital mechanics, Kalman filtering, GPS tracking and navigation, attitude and orbit determination, and advanced GN&C techniques. Gives examples using spacecraft, aircraft, launch, and missile vehicles.

MAE 473 Graphics in Computer-Aided Design

Credits: 3  
Prerequisites: senior standing  
Corequisites: None  
Type: LEC  
Examines basic programming concepts in computer-aided design (CAD) for mechanical engineers, including interactive computing in design; the role of graphics in CAD; 2-D graphics; computer graphic operations, including curve generation and splines; and 3-D graphics, including data structures, rotation, translation, reflection, isometric and perspective projection, hidden line removal, shading, surface generation, solid modeling concepts, and object-oriented programming. Involves computer programming projects in C++.

MAE 476 Mechatronics

Credits: 3  
Prerequisites: MAE 334  
Corequisites: None  
Type: LEC  
Studies the theory and practice of hardware and software interfacing of microprocessors with analog and digital sensor/actuators to realize mechatronic systems. Coverage includes microprocessor architectures, programming, digital and analog circuits, sensors, actuators, communication protocols, and real-time and operator interface issues as applicable to the design and implementation of simple mechatronic subsystems. Lectures emphasize basics of theory, architecture, and operation and are supplemented by labs aimed at building basic competence by hands-on practical implementation.

MAE 477 Computer-Aided Design Applications

Credits: 3  
Prerequisites: senior standing  
Corequisites: None  
Type: LEC/LAB  
Considers concepts in computer-aided engineering, including principles of computer graphics, finite element analysis, kinematic analysis, and animation of mechanical systems. Studies the use of integrated CAD/CAE tools. Incorporates projects in solid modeling, stress analysis of machine parts and structures, and mechanism response and animation.

MAE 478 Cardiovascular Biomechanics

Credits: 3  
Prerequisites: MAE 335, senior standing in engineering  
Corequisites: None  
Type: LEC  
Introduces the mechanical behavior of the cardiovascular system, basic physiology, and application of engineering fundamentals to obtain quantitative descriptions. Major topics include rheology of blood, mechanics of the heart, dynamics of blood flow in the heart and circulation, control of cardiac output, blood pressure, and regional blood flow.

MAE 482 Introduction to Composite Materials

Credits: 3  
Prerequisites: MAE 381  
Corequisites: None  
Type: LEC  
Provides a basic understanding of composite materials (manufacturing and mechanical properties). Examines behavior of unidirectional and short-fiber composites; analysis of laminated composites; performance of composites, including fracture, fatigue, and creep under various conditions; fracture modes of composites; manufacturing and microstructural characterization of composites; experimental characterization and statistical analysis; and polymeric, metallic, and ceramic composites.
MAE 484 Principles and Materials for Micro-Electro-Mechanical Systems (MEMS)  
Credits: 3  
Prerequisites: MAE 381  
Corequisites: None  
Type: LEC  
Current interest in micro-electro-mechanical systems or MEMS is driven by the need to provide a physical window to the micro-electronics systems, allowing them to sense and control motion, light, sound, heat, and other physical phenomena. Such micro-systems that integrate microelectronics and sensing elements on the same chip present an interesting engineering problem in terms of their design, fabrication, and choice of materials. Addresses the design, fabrication, and materials issues involving MEMS. Displays these issues within the context of MEMS for mechanical sensing and actuation, magnetic devices, thermal devices, automotive applications, and Bio-MEMS for biomedical applications.

MAE 493 Mathematical Methods in Robotics  
Credits: 3  
Prerequisites: MAE 376  
Corequisites: None  
Type: LEC  
A mathematical introduction to modeling, analysis, and control of robotic systems. The first part of the course deals with the theoretical frameworks for modeling, analysis (kinematics and dynamics) and control of generic robotic mechanical systems, rooted in rich traditions of mechanics and geometry. The rest of the course will examine many of these issues in the context of serial-chain and parallel-chain manipulators, wheeled mobile robots (and hybrid combinations of these systems).

MAE 494 Design Project  
Credits: 3  
Prerequisites: senior standing  
Corequisites: MAE 451  
Type: TUT  
Students working in teams of two or three under the supervision of a faculty member complete an original engineering design, which in some cases results in hardware. Design problems are drawn from industry and initiated by faculty. Where practical, two or more teams compete to solve the same problem. Teams meet individually with faculty on a weekly basis to discuss their projects.

MAE 496 Engineering Internship  
Credits: 3  
Prerequisites: Senior standing and permission of instructor  
Corequisites: None  
Type: TUT  
Provides experience in real-world engineering problems for senior mechanical and aerospace students. Assigns projects from local industry. Normally requires students to spend eight hours weekly in an engineering office. Students must present written and oral reports. Students interested in an internship or co-op experience should also consider the EAS 396 and EAS 496 sequence.

MAE 498 Undergraduate Research & Creative Activity  
Credits: 1  
Prerequisites: permission of instructor  
Corequisites: None  
Type: TUT  
Students collaborate with faculty research mentors on an on going project in a faculty member's laboratory or conduct independent research under the guidance of a faculty member. This experience provides students with an inquiry based learning opportunity and engages them as active learners in a research setting. Arrangements must be made with a specific faculty member before registration.

MAE 499 Independent Study in Mechanical Engineering  
Credits: 1  
Prerequisites: permission of instructor  
Corequisites: None  
Type: TUT  
Independent engineering projects or reading courses may be arranged with individual faculty members. Students must make arrangements with a specific faculty member for work on a particular topic before registering.

DMS 101 Basic Filmmaking  
Credits: 4  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Introduces students to programming in a general purpose computer language. Discusses the underlying fundamentals of how computers, electronics, and digital media work; and the mathematical bases of these fields. Presents students with ways that programming can be used in creating new, interactive, digital media art. Recommended for students interested in programming graphics and virtual reality.

DMS 103 Basic Video  
Credits: 4  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Image and sound formation; energy and time structures observed on the cathode ray tube; competency with basic video equipment in production of tapes.

DMS 105 Basic Documentary  
Credits: 4  
Prerequisites: None  
Corequisites: None  
Type: SEM  
The fundamental theoretical, creative, and technical concerns of documentary and video production.

DMS 107 Film History I  
Credits: 4  
Prerequisites: None  
Corequisites: None  
Type: LEC/LAB  
Surveys developments in international cinema from the 1890s to the present.

DMS 108 Film History II  
Credits: 4  
Prerequisites: None  
Corequisites: None  
Type: LEC/LAB  
Surveys developments in international cinema from the 1890s to the present.

DMS 109 Introduction to Film Interpretation  
Credits: 4  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Identification of and intellectual appreciation for the elements of film as a major art form.

DMS 110 Programming for Digital Art  
Credits: 4  
Prerequisites: permission of instructor  
Corequisites: None  
Type: LEC  
Introduces students to programming in a general purpose computer language. Discusses the underlying fundamentals of how computers, electronics, and digital media work; and the mathematical bases of these fields. Presents students with ways that programming can be used in creating new, interactive, digital media art. Recommended for students interested in programming graphics and virtual reality.

DMS 121 Basic Digital Arts  
Credits: 4  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Fundamental concepts and methods that underlie the use of computers in generating and processing images and sound, in the context of typical contemporary artistic practice in painting, photography, film, video, and music.

DMS 155 Introduction to New Media  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Introduces desk top tools and fundamental concepts used in the development of interactive and non-interactive digital media. Focuses on theoretical and practical aspects of creating digital messages with authoring/presentation tools. Provides a foundation for creating a broad range of digital media.

DMS 213 Immigration and Film  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Examines silent and early sound films, as well as contemporary films; as a reflection of the immigrant experience, as a site of struggle between older and newer immigrants, and as an instrument of government politics.

DMS 221 Web Design  
Credits: 4  
Prerequisites: None  
Corequisites: None  
Type: SEM  
Involves analyzing and creating web sites and web-based media for a variety of communication purposes. Addresses topics such as audience analysis, interface design, graphic design, and usability testing.
DMS 225 Digital Literature Review
Credits: 4
Prerequisites: None
Corequisites: None
Type: SEM
Intensive survey of the field of digital literature through a focus on the screening of digital texts. Primary emphasis is on "reading" the digital texts presented. Course also covers the relationship of innovative poetry to digital media, the phenomenon of the Internet and its relation to "the I", meaning-making through the context, design, and writerly qualities of Web pages, traditions of hypertext, the materiality of code, the history of e-poetry, and digital media poetry in the academy. Special attention will be given to understanding a broad range of innovative works in the medium including hypertext, digital and kinetic literature, interactive texts, and works in networked and programmable media, and to examining, interpreting, and interrogating the key theoretical texts of the most significant practitioners in the field. Includes foundational early theory, writings from foundational scholarly hypertext theorists, and work by more recent cutting-edge independent digital theorists. Examines the role of programming as a social, literary, and language-related act. The cultural impact of films related to programming/cyberculture is discussed, with film screenings as appropriate. Discussion of key cyberculture and media theory authors as relevant.

DMS 231 3-D Character Animation
Credits: 4
Prerequisites: permission of instructor
Corequisites: None
Type: SEM
Provides students with an understanding of 3-D animation principles and how to use digital tools effectively to create animated compositions.

DMS 259 Introduction to Media Analysis
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Provides students with a theoretical and historical grounding in analyzing the media and visual revolution of the 20th century. Encourages students to experiment with various media codes in their final exam projects in which they combine technical skills with analytical and critical thinking.

DMS 303 Video Analysis
Credits: 4
Prerequisites: None
Corequisites: None
Type: LEC
Viewing and analyzing electronic image/sound structures and compositional models (video art) in a context of contemporary critical thought; viewing tapes, readings, and lectures; having participatory discussions; and entertaining visitors conversant with the state of the art.

DMS 304 Video Analysis
Credits: 4
Prerequisites: None
Corequisites: None
Type: LEC
Viewing and analyzing electronic image/sound structures and compositional models (video art) in a context of contemporary critical thought; viewing tapes, readings, and lectures; having participatory discussions; and entertaining visitors conversant with the state of the art.

DMS 305 Film Analysis
Credits: 4
Prerequisites: None
Corequisites: None
Type: LEC/LAB
World cinema, American avant-garde, personal-independent cinema, including a view to its European counterpart.

DMS 306 Film Analysis
Credits: 4
Prerequisites: None
Corequisites: None
Type: LEC/LAB
World cinema, American avant-garde, personal-independent cinema, including a view to its European counterpart.

DMS 333 Third World Cinema
Credits: 4
Prerequisites: None
Corequisites: None
Type: LEC/LAB
Introduces students to a collection of film and television productions, from colonized, neo-colonized, and decolonized countries whose political, economic, and cultural structures have been shaped by the colonial process.

DMS 341 Intermediate Video Workshop
Credits: 4
Prerequisites: DMS 103 or DMS 105; portfolio review
Corequisites: None
Type: SEM
Develops technical skills for effective use of video as an artistic tool for documentation and for personal expression. Covers lighting, editing, postproduction, video electronics, and staging.

DMS 343 Digital Video
Credits: 4
Prerequisites: DMS 103, DMS 121
Corequisites: None
Type: LEC
Video postproduction as digital study; integrating digital arts production with video imagery.

DMS 401 Advanced Film Production I
Credits: 4
Prerequisites: DMS 301 or permission of instructor
Corequisites: None
Type: SEM
Introduces microphones, 1/4-inch magnetic tape recording and editing, and A&B roll editing.

DMS 403 Advanced Documentary Production
Credits: 4
Prerequisites: DMS 341 or DMS 342; permission of instructor
Corequisites: None
Type: SEM
Principles and theory of documentary form, ethical issues, methods. Production work in digital video, audio, web based media or still photography.

DMS 406 Ethnographic Film
Credits: 4
Prerequisites: None
Corequisites: None
Type: SEM
Provides a critical understanding of ethnographic media and cultural documentary. Combines theory and hands-on production practice. Examines cross cultural issues of representation, marginality, community collaboration, indigenous media and fieldwork for media.

DMS 409 Nonfiction Film
Credits: 4
Prerequisites: None
Corequisites: None
Type: SEM
Screenings and discussion related to examining non-fiction and documentary film and video from 1920 to the present, including cinema verité, experimental, reflexive, diary, political, music television, and political documentaries.

DMS 411 Film Theory
Credits: 4
Prerequisites: None
Corequisites: None
Type: SEM/LAB
Principle theories of film through critical readings and closely examining films discussed in them.

DMS 413 Film Narrative
Credits: 4
Prerequisites: None
Corequisites: None
Type: SEM/LAB
Principle theories of film through critically reading texts and closely examining films discussed in them.

DMS 415 Special Topics
Credits: 4
Prerequisites: None
Corequisites: None
Type: LEC/LAB
In-depth study of media topics. Recent topics have included gender and technology, cyber theory, virtual communities, and interface design.

DMS 416 Special Topics
Credits: 4
Prerequisites: None
Corequisites: None
Type: LEC
Topics vary to reflect a rapidly changing field of study.

DMS 417 : Special Topics
Credits: 4
Semester:
Prerequisites: None
Corequisites: None
Type: LEC
The conceptual and practical production of digital art, primarily focusing on the manipulation and generation of moving images and sounds from within a computer environment.

DMS 419 Advanced Digital Arts Production
Credits: 4
Prerequisites: DMS 121 or DMS 155; portfolio review
Corequisites: None
Type: SEM/LAB
The conceptual and practical production of digital art, primarily focusing on the manipulation and generation of moving images and sounds from within a computer environment.

DMS 420 Advanced Digital Arts Production
Credits: 4
Prerequisites: DMS 419, permission of instructor
Corequisites: None
Type: SEM/LAB
The conceptual and practical production of digital art, primarily focusing on the manipulation and generation of moving images and sounds from within a computer environment.

DMS 423 Programming Graphics I
Credits: 3
Prerequisites: DMS 121 or DMS 155; portfolio review
Corequisites: None
Type: SEM/LAB
Production course. Introduces students to the concepts and practice of programming 3-D computer graphics using C++, OpenGL, the GLUT libraries, and a basic sound server. The major focus is on creating interactive art experiences by programming both graphics and sound. Students write their own code to create customized computer tools and visuals and learn the fundamentals of graphics programming.
DMS 424 Programming Graphics II
Credits: 3
Prerequisites: DMS 423, permission of instructor
Corequisites: None
Type: SEM/LAB
Builds on DMS 423 and extends students' knowledge of Open GL and C++ into programming virtual reality environments. Students use CAVElib software to build immersive 3-D virtual worlds.

DMS 425 Visual Media Poetics
Credits: 4
Prerequisites: None
Corequisites: None
Type: SEM
Provides an opportunity to explore the expressive potential of language as a creative material, with a focus on its alphabetic, visual, and aural levels, with a focus on forms of visual expression, including Concrete Poetry. We will be thinking about the multiple possibilities of language, as a conjunction of possibilities, textures, tones, meanings, and media. We will look at digital literature as a merging of form, image, language, and sound, and we will explore works that somehow do this to extraordinary effect.

DMS 426 Sound Media Poetics
Credits: 4
Prerequisites: None
Corequisites: None
Type: SEM
Experimental poetry, sound poetry, and digital media poetry share certain features of improvisation, composition, and structure. This seminar will concentrate on a close examination of innovative literary and media forms from the perspective of sound. It will involve careful reading of experimental poetry, close listening to sound poetry, and examination of digital media works, where applicable.

DMS 428 2D Animation Graphics
Credits: 4
Prerequisites: One of the following: DMS 121, DMS 101, DMS 103, or DMS 231
Corequisites: None
Type: SEM
Introduces students to major concepts in 2D animation and motion graphic design. Topics include developing concepts, rotoscoping, interpolated animation, and composing animation with video. Surveys the history of animation, fine arts animation, and contemporary trends in motion graphic design. Students will produce a finished portfolio of animation and motion graphic design work. (Production intensive design course.)

DMS 431 Advanced Modeling
Credits: 4
Semester:
Prerequisites: None
Corequisites: None
Type: LEC
Advanced program on modeling. The objectives of this course are to illustrate the importance of context on the modeling process; focus on the development of a creative, individualized, working methodology; and build practical, technical, and organizational skills. Students will learn a variety of methods of importing information from real-life measurements, data-bases, clients, into the modeling process. The core of the course will be hands on work, designing, planning, modeling. Students will be taken through the steps of the production process from content design, through design of a production pipeline, to implementation. The final objective will be to produce a substantive modeling project.

DMS 434 Special Topics
Credits: 4
Prerequisites: None
Corequisites: None
Type: SEM
Topics vary by semester.

DMS 435 Narrative Scriptwriting
Credits: 4
Prerequisites: Portfolio review, permission of instructor
Corequisites: None
Type: SEM
Gives students first-hand experience with all the primary aspects and stages of preproduction planning (scriptwriting and storyboarding or structural diagramming) of a feature film.

DMS 438 Building a VR Art Project I
Credits: 3
Prerequisites: DMS 121 or DMS 155; portfolio review
Corequisites: None
Type: SEM/LAB
For students with graphics programming experience and 3-D modeling packages (specifically Maya). Students collaborate as teams to build immersive virtual reality art experiences. Introduces the student to the Ygdrasil system, a high-level VR authoring toolkit for large-scale art projects.

DMS 439 Building a VR Art Project II
Credits: 3
Prerequisites: DMS 438, permission of instructor
Corequisites: None
Type: SEM/LAB
In this sequel to DMS 438 students extend their skills with VR authoring tools and programming/modeling for real-time applications. Focuses on networking with remote sites, as well as the use of agents, smart environments, gaming techniques, interface and interactivity, and effective sound design in VR.

DMS 440 Women Directors
Credits: 4
Prerequisites: None
Corequisites: None
Type: SEM
Provides a critical understanding of women as feature film directors. Looks at English-language productions from the 1990s by a cross-generation of emerging and established filmmakers, including Jane Campion, Julie Dash, and Mary Harron. Also considers the "uncomfortable truths" regarding underrepresentation of women directing both studio and independent productions.

DMS 441 Advanced Video Production
Credits: 4
Prerequisites: DMS 341 or DMS 342
Corequisites: None
Type: SEM/LAB
Making independent video art: camera work, editing, acting, and directing. Group exercises and critiques. Requires video production and postproduction outside of class.

DMS 442 Advanced Video Production
Credits: 4
Prerequisites: DMS 341 or DMS 342
Corequisites: None
Type: SEM/LAB
Making independent video art: camera work, editing, acting, and directing. Group exercises and critiques. Requires video production and postproduction outside of class.

DMS 447 Sound Design
Credits: 4
Prerequisites: portfolio review, or permission of instructor
Corequisites: None
Type: SEM
Explores issues and techniques in the area of sound design and audio production. Contextualizes the relation between image and sound by drawing from many media forms, existing and/or original, to create and visually represent sound.

DMS 448 Games Studies Colloquium
Credits: 4
Prerequisites: DMS 121 or DMS 155; DMS 110, DMS 259 or permission of instructor
Corequisites: None
Type: SEM
Comprehensive investigation of the emerging field of Games Studies, the critical analysis of games and interactive environments made possible by the computer. Addresses different theoretical perspectives that view games and gaming as historical, social, cultural, aesthetic, technical, performative, and cognitive phenomena. Examines how video games encompass an increasingly diverse set of practices, populations, and locations from fantasy football to multi-player medieval fantasy, from simulations of real life to alternate realities, from fanatics to activists, from nightclubs to competitive arenas to public streets to the classroom; from consoles to mobile phones, to large screen projections. Analyzes not only popular games but interactive installations, pervasive games, mixed and virtual reality environments. Discusses the interdisciplinary nature of a cultural practice which depends on art, artificial intelligence, computer graphics, interface design, human computer interaction, psychology, narrative, networking, and technical innovation. Asks why interactive experiences are so popular, and tries to understand the social and cultural implications of games and gaming.

DMS 451 Avant-Garde Cinema
Credits: 4
Prerequisites: None
Corequisites: None
Type: LEC/LAB
Examines the history of the so-called avant-garde, from the Russian and French avant-garde of the 1920s to the postwar European and American experimental milieu. While focusing principally on Europe and North America, the course gives attention to related developments in Africa, Asia, and South America, depending on availability. Questions of methodology, canon, genre, marginality, oppositionality, plagiarism, primitivism, originality, and ideology come into theoretical play while we examine the Institutional Mode and its discontents.

DMS 457 Locative Media and the City
Credits: 4
Prerequisites: None
Corequisites: None
Type: SEM
Introduces students to major concepts in 2D animation and motion graphic design. Topics include developing concepts, rotoscoping, interpolated animation, and composing animation with video. Surveys the history of animation, fine arts animation, and contemporary trends in motion graphic design. Students will produce a finished portfolio of animation and motion graphic design work. (Production intensive design course.)
DMS 460 Locative Media
Credits: 4
Semester: Spring
Corequisites: None
Type: SEM
Locative Media is an emerging field of art and technology practices solat
location, data, mobile computing and wireless networks in positing alternate
types for inhabiting contemporary public space. Some of these practices offer new insights into issues related to place and modes of spatial occupation. This seminar will focus on Locative Media practices situated within urban environments, and seek to establish a critical context within which to evaluate some of their key claims and aspirations. Drawing on a broader discourse involving the technological mediation of urban experience, the course will combine readings in social theory, spatiality, technology and urban form with an examination of specific art practices of the Surrealists, the Situationists, conceptual and performance art from the 60's and 70's, and more recent projects in Locative Media. Concepts of mapping, psycho-geography, participatory networks, and hybrid spatial experiences will be examined in relation to how we locate and orient ourselves within, navigate through, and inhabit the contemporary city. Students will have the option of producing either a research paper or a project, working independently or in collaboration with others.

DMS 461 Elements of Machine Culture
Credits: 4
Prerequisites: None
Type: SEM
Explores issues relating to culture and technology. Focuses on advanced readings and fiction pertaining to cyberculture. Critically analyzes technology including social meanings of technological tools, formalist and socialist art practices, the organic body vs. the mechanical engine, cyborgs, artificial intelligence, virtual reality, and robotics.

DMS 462 Game Design
Credits: 4
Prerequisites: DMS 121 or DMS 155; DMS 110
Corequisites: None
Type: SEM
Production course on the design of computer based games. Games are considered a new art form and in order to create compelling games, students must be aware of the particularities of the form in both structural and aesthetic terms. Clearly the most important difference between games and other art forms are the interactive and interpersonal dynamics of gaming. However, game design draws on many other disciplines (writing, drawing, graphic design, architecture, and programming), and that familiarity with the assumptions and languages of these disciplines is essential for a game designer. Core issues of games design: what is a game? what is the nature of play? what makes good game play? what is the most effective use of sound and visuals in a game? how can narrative be used in games? and what are the roles of presence, engagement, and interactivity in games? Encourages experimental thinking about the boundaries and possibilities of computer games. Students work in teams to produce a series of short games projects. Focuses on creativity and experimentation. Thorough, hands-on grounding in the process of game design, from conception to play-testing, and fosters the skills required to produce, examine, and critique games.

DMS 463 Interactive Fiction
Credits: 4
Prerequisites: DMS 121 or DMS 155; DMS 110, DMS 259 or permission of instructor
Corequisites: None
Type: SEM
Interactive stories set in immersive 3D virtual worlds are a staple of science fiction. Devices that allow people to inhabit personalized stories and interact with computer characters are described in Neuromancer, Star Trek, and Ray Bradbury's short story, The Vveldt. In the 1980s and 1990s industry insiders believed that a marriage between video games and Hollywood movies was imminent. Meanwhile, writers were excited by the non-linear and interactive potential of hypertext, but killer interactive fiction has not emerged. This course will examine interactive narrative in theory and practice. We will look at the reasons why interactive fiction is so difficult to create and study. Encourages students to create their own interactive fiction.

DMS 474 Seminar on Postmodernism
Credits: 3
Prerequisites: None
Type: SEM/LAB
Various theoretical discussions of postmodernism and approaches to particular texts, which define them as postmodern and/or use theories of postmodernism in their analysis.

DMS 484 Language Media Poetics
Credits: 4
Prerequisites: None
Corequisites: None
Type: SEM
Focuses on language media practice, including procedural practices, computer-assisted techniques, and the application of language material as data. A key component of our approach will be to enhance multimedia digital and digital poetry production.

DMS 485 Media Robotics I
Credits: 4
Prerequisites: Portfolio review, permission of instructor
Corequisites: None
Type: LEC
Introduces students to the programming of fast and robust industrial microprocessors for art-intervention purposes. Students investigate concepts in the programming language C and write code to control remote devices, sensors and motors. This course is both a traditional programming course as well as a studio course in using computation in art practice.

DMS 499 Independent Study
Credits: 1
Prerequisites: permission of instructor
Corequisites: None
Type: TUT

Medical Technology

MT 101 Introduction to Medical Technology I
Credits: 1
Prerequisites: None
Corequisites: None
Type: SEM
Includes visits to local hospital laboratories to view medical technologists at work in the various specialty areas, and discussion of current topics guided by senior students under faculty supervision.

MT 201 Medical Terminology
Credits: 1
Prerequisites: None
Corequisites: None
Type: SEM
Includes medical terminology and discussion of current topics.

MT 302 Instrumental Analysis
Credits: 4
Prerequisites: coregistration in MT 401 or equivalent, MT and BTE majors only
Corequisites: None
Type: LEC/LAB
Covers principles and operation of a variety of instruments used in clinical laboratories and medical research. Discusses physical and chemical properties of matter that make measurement possible. Presents theoretical and practical aspects of spectral, electrochemical, chromatographic, colligative and nuclear instrumentation. Also presents relevant calculations and applies them in lab experiments.

MT 401 Clinical Biochemistry
Credits: 4
Prerequisites: CHE 202 or equivalent or permission of instructor
Corequisites: None
Type: LEC/REC
Presents basic biochemistry, emphasizing human metabolic pathways and their relationship to health and disease. Case studies and problem-solving illustrate the applications of biochemistry to human disease and its diagnosis in the clinical laboratory.

MT 402 Fundamentals of Immunology
Credits: 3
Prerequisites: MIC 301 or equivalent or BIO 205 or equivalent
Corequisites: None
Type: LEC/LAB
Explores functions and mechanisms of the human immune system, including antigen-antibody reactions and their application to serological testing. Autoimmune diseases, syphilis, hepatitis, AIDS, infectious mononucleosis, cytomegalovirus infections and toxoplasmosis are among the disease states studied.
MT 405 Clinical Immunohematology
Credits: 4
Prerequisites: MT 405, senior standing in medical technology
Corequisites: None
Type: LEC/LAB
Studies human blood group antigens and antibodies; also examines compatibility testing for blood transfusions and problem solving involving case studies.

MT 407 Clinical Parasitology
Credits: 2
Prerequisites: senior standing in medical technology or permission of instructor
Corequisites: None
Type: LEC/LAB
Comprehensive study of human parasitology. Emphasizes clinical aspects of parasitic diseases, including identification and life cycles of clinically significant parasites. Laboratory involves identifying characteristics of parasites using fixed and fresh clinical specimens.

MT 410 Clinical Microbiology
Credits: 3
Prerequisites: MT 405, MT 429, senior standing in medical technology
Corequisites: None
Type: LAB
Assignment in a clinical laboratory that provides supervised practicum in clinical bacteriology.

MT 411 Clinical Hematology
Credits: 4
Prerequisites: MT 405, senior standing in medical technology
Corequisites: None
Type: LEC/LAB
Comprehensive study of clinical hematology. The lecture focuses on the components of blood and their specific role, hematopoiesis, and the incidence, etiology, diagnosis and treatment of hematologic disorders. The laboratory complements the lecture and provides the opportunity to develop a working knowledge of the basis for hematologic laboratory testing, the development of the technical skills for the performance of a variety of laboratory procedures and the interpretation of laboratory results.

MT 412 Hospital Hematology
Credits: 3
Prerequisites: second-semester senior standing in medical technology; MT 411, MT 431
Corequisites: None
Type: LAB
Assignment in a clinical laboratory that provides supervised practicum in clinical hematology.

MT 413 Clinical Elective
Credits: 2
Prerequisites: second-semester senior standing in medical technology
Corequisites: None
Type: LAB
Involves rotations designed to provide depth and enrichment of students’ experience in particular health-care areas pertinent to medical technology (e.g., virology, nuclear medicine, toxicology, tissue pathology, cardiology).

MT 414 Hospital Blood Bank
Credits: 3
Prerequisites: MT 405, second-semester senior standing in medical technology
Corequisites: None
Type: LAB
Assignment in a clinical laboratory that provides supervised practicum in blood banking.

MT 416 Clinical Parasitology
Credits: 1
Prerequisites: MT 409 or permission of instructor
Corequisites: None
Type: LEC/LAB
Surveys the distribution, pathogenesis, identification and life cycles of clinically significant parasites, emphasizing the infective and diagnostic stages. The laboratory features identifying characteristics of parasites using fixed and fresh clinical specimens.

MT 417 Laboratory Education and Seminar
Credits: 2
Prerequisites: senior standing in medical technology or permission of instructor
Corequisites: None
Type: LEC/SEM
Examines clinical and classroom instructional design, evaluation strategies, statistical tools, and teaching skills; seminar portion features student presentations about topics relevant to medical technology.

MT 419 Phlebotomy
Credits: 1
Prerequisites: second-semester senior standing in medical technology
Corequisites: None
Type: LEC/LAB
Assignment in a clinical laboratory that provides instruction and supervised practicum in blood-collection techniques.

MT 420 Clinical Correlations
Credits: 1
Prerequisites: second-semester senior standing in medical technology
Corequisites: None
Type: LEC
Discusses case studies using problem-solving techniques to analyze and interpret relevant clinical and laboratory data. A comprehensive examination covers all program coursework.

MT 421 Clinical Urinalysis and Body Fluids
Credits: 2
Prerequisites: MT 407 or permission of instructor
Corequisites: None
Type: LEC/LAB
Explores theoretical and applied aspects of urinalysis and body fluids.

MT 422 Biomolecular Technology and Diagnostics
Credits: 2
Prerequisites: MT 401 or equivalent, senior standing in biotechnology or medical technology or permission of instructor
Corequisites: None
Type: LEC/LAB
Discusses the basic biochemistry needed to understand Mendelian genetics, basic techniques used in molecular biology, practical uses of molecular biotechnology in diagnosis, research and industry, and ethical issues surrounding the use of biotechnology. Laboratory consists of hands-on and demonstration exercises illustrating techniques used in biomolecular technology and diagnosis.

MT 423 Laboratory Management
Credits: 1
Prerequisites: second-semester senior standing in medical technology or permission of instructor
Corequisites: None
Type: LEC
Covers managerial theory and practice, resume writing and interviewing, influence of regulatory agencies, and current issues affecting health care.

MT 426 Technical Communications for the Scientific Professional
Credits: 4
Prerequisites: undergraduate junior biotechnology majors only or permission of instructor
Corequisites: None
Type: LEC
Covers the multiple styles of presentation that are required for effective technical communication, emphasizing the ability to accurately analyze and present data and technical information. Formats that are emphasized include writing abstracts, materials and methods, introductions with references, standard operating protocols, figure legends, and patent applications. Additional lectures cover avoiding common errors in grammar and usage, accessing library resources, and use of molecular biology databases. Expect graduate students to complete a grant application and generate a completed bibliography to be used in their thesis research. The course also covers the correct usage of multiple software packages used in science writing, including Adobe Photoshop, SPSS, and EndNote.

MT 428 Forensic Science
Credits: 3
Prerequisites: organic chemistry and biology or permission of instructor
Corequisites: None
Type: LEC
Introduces the field of forensic science, including the general areas of forensic serology, DNA analysis, chemistry/drug analysis, firearms/tool marks, arson, and trace evidence.

MT 429 Clinical Mycology
Credits: 1
Prerequisites: MIC 301 or equivalent, MT 409, senior standing in medical technology or permission of instructor
Corequisites: None
Type: LEC/LAB
Comprehensive study of the classification, etiology, pathogenicity, diagnosis and treatment of fungal infections. Emphasizes techniques and methods used to isolate and identify fungal pathogens. The laboratory consists of microscopic and biochemical procedures to identify molds and yeasts from clinical specimens.
MT 430 Bioseparation Techniques

Credits: 2
Prerequisites: MT 302, MT 401
Corequisites: None
Type: LAB
Introduces the biochemistry of selected laboratory experiments designed to provide the student experience with common analytical techniques associated with the isolation, quantification, and characterization of biomolecules emphasizing instrumentation. Practices multiple bioseparation techniques including thin layer, classical column, high performance liquid, and gas chromatography as well as electrophoretic separation. Also employs automated and semi-automated chemistry systems.

MT 431 Clinical Hemostasis

Credits: 2
Prerequisites: MT 405, MT 411, senior standing in medical technology
Corequisites: None
Type: LEC/LAB
Comprehensive study of hemostasis including an in-depth examination of the components of coagulation and fibrinolytic systems and related disorders. Emphasizes the clinical and diagnostic features of the disorders of coagulation and fibrinolysis, and the selection and performance of appropriate laboratory tests.

MT 432 Introduction to Medical Genetics

Credits: 1
Prerequisites: MT 401 or equivalent
Corequisites: MT 422
Type: LEC
Discusses the basic principles of medical genetics, including basic Mendelian genetics, the molecular and biochemical basis of genetics, developmental genetics, genetics of complex diseases, genetics of cancer, genetic counseling, and prenatal diagnosis.

MT 434 Cell and Tissue Culture Techniques

Credits: 4
Prerequisites: BIO 201, MIC 301, MT 402
Corequisites: None
Type: LEC/LAB
Introduces the concepts of cell and tissue culture, with specific laboratory exercises designed to expose the student, through the use of primary and established cell lines, to sterile technique, media preparation, quality control and cell line validation, passaging of nonadherent and adherent cells, cryopreservation, and microscopy and digital photography. Cellular assays for viability, proliferation, invasion, and apoptosis are performed.

MT 445 Biotechnology Career Preparation

Credits: 1
Prerequisites: MT 401, MT 402, MT 302
Corequisites: None
Type: SEM
Introduces the various careers in biotechnology with participation by individuals from various biotechnology companies. Discusses career options such as research and development, quality control and quality assurance, regulatory affairs, marketing, management, patent development, and sales. Teaches written skills including preparation of a resume and a curriculum vitae. Oral skills include preparing for and experiencing a mock interview.

MT 496 Internship in Biotechnology

Credits: 1
Prerequisites: MT 302, MT 401, MT 402
Corequisites: None
Type: TUT
A one-semester, variable credit internship at a biotechnology site. Includes participation in one or more projects selected to integrate the materials learned in academic courses. Placement is accomplished by the program director, based on the coursework completed and interest of the student. Generally requires an interview at the biotechnology site before placement.

MT 499 Independent Study

Credits: 1
Prerequisites: permission of instructor
Corequisites: None
Type: TUT
Involves method and equipment evaluations or other short-term projects, arranged in consultation with individual faculty members.

MCH 311 The Chemistry of Drug Action

Credits: 3
Prerequisites: CHE 202 or CHE 252
Corequisites: None
Type: LEC
Intended for pharmacy majors. Covers physicochemical and structural basis of drug action, drug sources, mechanisms of drug action, drug design and selectivity, drug incompatibility, and drug interactions.

MCH 401 Principles of Medicinal Chemistry I

Credits: 3
Prerequisites: CHE 202 or CHE 252; CHE 319 or CHE 349; CHE 312
Corequisites: None
Type: LEC
Examines principles of structural, physical, and physical-organic chemistry, including mechanistic considerations involved in synthetic organic chemistry, bioorganic chemistry, and design for chemotherapeutic agents.

MCH 402 Principles of Medicinal Chemistry II

Credits: 3
Prerequisites: MCH 401
Corequisites: None
Type: LEC
Studies mechanisms of action and other factors that influence drug action within specific drug classes of pharmacodynamic and chemotherapeutic drugs, drug structures, and structure-activity relationships.

MCH 427 Combinatorial Chemistry

Credits: 3
Prerequisites: CHE 202 or CHE 252 or permission of instructor
Corequisites: None
Type: LAB/LEC
Examines medicinal and synthetic organic chemistry aspects of the design, simultaneous synthesis and computerized tracking, in a highly efficient and automated fashion of many new compounds. Students may take the lecture module alone, but the lab requires completion of the lecture and permission of the instructor.

MCH 498 Undergraduate Research Participation in Medicinal Chemistry

Credits: 1
Prerequisites: CHE 202 or CHE 252; CHE 301
Corequisites: None
Type: LAB
Involves projects in medicinal chemistry involving a literature search and lab work.
The Methods of Inquiry is all about thinking. The course offers undergraduates concrete ways to approach their studies by helping them become actively involved in their own learning processes. All activities in the course explore the theoretical foundations of learning and thinking, but the main emphasis is on ways to recognize and use effective learning strategies as first steps towards understanding and well-reasoned critical thinking. Students review and discuss: How to develop an appropriate mindset for learning, how to think critically within a discipline, and of the importance of meta-cognition, including the functional role of persons associated with the academic field. In the latter half of this course we will discuss immune defense and immunopathology as it relates to allergy/hypersensitivity, inflammation, innate immunity, mucosal immunity, vaccines and tumor immunity. This is an introductory course and presented entirely as lectures. Students will be expected to read assigned chapters in textbooks and/or some recent publications in scientific journals prior to each lecture. Assignments, announcements and slides for lectures are provided on line. An understanding of the principles of biochemistry, molecular and cell biology is necessary; students lacking this background may have difficulty with this course.

MIC 319 Introduction to Scientific Literature
Credits: 1
Prerequisites: BCH 403 or BIO 205; BIO 319, MIC 301, permission of instructor
Type: SEM
Provides advanced discussions on topics in bacteriology, mycology, virology, parasitology, and immunology. Students present papers on current scientific material and participate in discussions.

MIC 320 Introduction to Scientific Literature
Credits: 1
Prerequisites: BCH 403 or BIO 205; BIO 319, MIC 301, permission of instructor
Type: SEM
Provides advanced discussions on topics in bacteriology, mycology, virology, parasitology, and immunology. Students present papers on current scientific material and participate in discussions.

MIC 401 General Microbiology
Credits: 6
Prerequisites: BCH 403 or BIO 205; BIO 319, MIC 301, permission of instructor
Type: LEC
Discusses in-depth the biology, physiology, genetics, and pathogenicity of selected bacteria, viruses, and parasites. Presents lectures and current literature on molecular mechanisms.

MIC 412 Fundamentals of Immunology
Credits: 4
Prerequisites: BCH 403, BIO 201, or BIO 205; or equivalent biochemistry course
Corequisites: None
Type: LEC
The first part of the course covers anatomy and function of the immune system, cell interactions, antibody structure and function, antigen-antibody reactions, cell-mediated immunity, and biological effects of immunological reactions. In the latter half of this course we will discuss immune defense and immunopathology as it relates to allergy/hypersensitivity, inflammation, innate immunity, mucosal immunity, vaccines and tumor immunity. This is an introductory course and presented entirely as lectures. Students will be expected to read assigned chapters in textbooks and/or some recent publications in scientific journals prior to each lecture. Assignments, announcements and slides for lectures are provided online. An understanding of the principles of biochemistry, molecular and cell biology is necessary; students lacking this background may have difficulty with this course.

MIC 499 Independent Study
Credits: 1
Prerequisites: permission of instructor
Corequisites: None
Type: TUT
Available by arrangement with one or more faculty members. Involves participation in a research project that provides limited laboratory experience in some aspect of microbiology or immunology.

Millard Fillmore College

MFC 101 Introduction to Computers and Information Systems
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Provides a general introduction to computers and data processing in the organizational environment; serves as a basis for all subsequent data processing courses. Topics include basic concepts of computer organization, data representation, problem-solving methodology, data communications, business information systems, sample program exercises, and functional role of persons associated with the industry. Formerly MFC 115.

MFC 117 Programming C++ for Beginners
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
This course will be a non-object based introduction to programming and programming concepts Using C++. It is designed for individuals that have no prior programming experience. Topics include: algorithm development, step-by-step program design, the use of a compiler to run and debug code, and basic programming structures as loops, if statements and functions.

MFC 118 Microcomputer Applications 1
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces the fundamentals of computers, emphasizing their day-to-day use and applications in the business environment. Class time covers concepts but is basically hands-on exercises using Microsoft Office 2003 (Word, Access, Excel and Power Point). Computer-based projects in a Windows environment form a significant portion of the student's grade. Formerly MFC 101 and CS 101.

MFC 132 Java Script
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Introduces this English-based, script, platform-neutral, object-oriented, and secure programming language. Also introduces the Java applet, and includes the standard Java class libraries and stand-alone applications. Previous programming knowledge is highly recommended.
MFC 141 Dietary Supplements  
Credits: 1  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Reviews the history of dietary supplements. Topics covered include the various forms, doses, claimed uses, and possible adverse effects of the most popular dietary supplements. Critiques possible underlying mechanisms. Identifies populations that may be benefited or harmed. Teaches students to judge health claims and assess risks with the most popular dietary supplements. Evaluates students by an on-line multiple choice test for each supplement and a short review of a supplement not covered, or by more details on one present.

MFC 146 Introduction to C++  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Introduces practical, real-world applications of C++ programming and the theory of object-oriented design for Windows. Covers templates, multiple inheritance, C++ streams, exception handling and other C++ programming topics. Previous programming knowledge is highly recommended.

MFC 149 Visual Basic  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
An event-driven programming course taught through the Visual Basic (6.0) environment. Students gain not only an understanding of programming but also how to use it in the context of a graphical user interface, such as Windows 95 or 98. Since Windows programs often share information, this programming language becomes very useful when creating macros and adding programming enhancements.

MFC 199 Career Decision Making  
Credits: 1  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Assists the adult student in clarifying education and career plans for decision making. Students learn how to assess personal interests, abilities, values, and goals; research and evaluate various career options; and organize a job search.

MFC 209 Special Topics in Micro Applications  
Credits: 1  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Content varies each semester.

MFC 210 Special Topics in Micro Applications  
Credits: 1  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Content varies each semester.

MFC 211 Special Topics in Micro Applications  
Credits: 1  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Content varies each semester.

MFC 212 Special Topics in Micro Applications  
Credits: 1  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Content varies each semester.

MFC 213 Special Topics in Micro Applications  
Credits: 1  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Content varies each semester.

MFC 214 Introduction to Perl  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Introduction to Perl and first principals in programming and the syntax of the Perl programming language. Includes working with files, directories, and databases, using the CPAN modules, writing web applications in Perl and using Perl as an object oriented programming language.

MFC 215 Programming for the Web I  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Students apply HTML and JavaScript to create web sites employing the principles of usability engineering and information architecture. Topics include creation of web page features, FTP, accessibility, usability, information design, and the graphic design of web pages. The course also includes introductions to cascading style sheets (CSS), dynamic HTML, and JavaScript. The Windows software used includes Text-pad, WSFTP, MS IE, and Netscape. Students do not need to purchase software because all software is included on the textbook’s CD-ROM.

MFC 216 Introduction to Linux  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  

MFC 217 Introduction to Linux  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Introduces the objectives, techniques, and organization of material management. Topics include the economics of material plans; periodic control systems; order point; techniques of inventory control; and methods of improving coordination, communication, and control for increased productivity and decreased material cost. Knowledge of basic statistics helpful but not required.

MFC 220 Special Topics in Micro  
Credits: 1  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Topics vary each semester.

MFC 221 Purchasing: Procurement Aspects  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Surveys the organization and practice of purchasing management in organizational settings, emphasizing procurement functions and responsibilities. Topics include capital equipment, inventory control, traffic, receiving, storekeeping, and surplus material. Utilizes a case-study approach to determine the right quality, price, time, quantity, and source.

MFC 222 Purchasing: Managerial Aspects  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Surveys the applications and uses of purchasing as a function of management. Utilizes a case-study approach to such topics as planning and organization, appraisal and control, negotiation, legal aspects, value analysis, make or buy, automation, and government purchasing.

MFC 223 Transportation Management and Law  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
An overview of transportation management in today's deregulated environment. Topics include the Motor Carrier's Act and the Staggers' Act of 1980, which altered motor and rail carriage in the United States; the effects of antitrust laws; hazardous materials regulations; and other regulations as they apply to transportation today.

MFC 224 Materials Management  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Introduces the objectives, techniques, and organization of material management. Topics include the economics of material plans; periodic control systems; order point; techniques of inventory control; and methods of improving coordination, communication, and control for increased productivity and decreased material cost. Knowledge of basic statistics helpful but not required.

MFC 225 Introduction to Health Care in the United States  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Introduces the structure and process of health care in the United States, as well as critical policy issues the system confronts. Topics include the historical development of the health-care system; types of facilities, services, agencies, and personnel that constitute the system; levels of health-service intervention and special problems of high-risk populations, and responses to each by the health-care system; quality-control activities; and critical health-policy dilemmas that health-care administrators face.

MFC 226 Business Letters  
Credits: 2  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Elements of style that contribute to clear, effective professional business writing; common grammatical errors and how to avoid them; types of business documents and style appropriate to each.

MFC 227 Applied Marketing Techniques  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Allows students to apply a broad mix of marketing actions and techniques to real world situations. Includes in-depth review of how to establish a marketing plan, the marketing methods available to achieve corporate goals, and the creative process employed to communicate to the targeted market.

MFC 228 Business Letters  
Credits: 2  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Elements of style that contribute to clear, effective professional business writing; common grammatical errors and how to avoid them; types of business documents and style appropriate to each.

MFC 229 Applied Marketing Techniques  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Allows students to apply a broad mix of marketing actions and techniques to real world situations. Includes in-depth review of how to establish a marketing plan, the marketing methods available to achieve corporate goals, and the creative process employed to communicate to the targeted market.
MFC 301 Introduction to Telecommunications

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Surveys the discipline of telecommunications in today's deregulated environment for current or prospective managers of telephone and data communications systems. Topics include fundamental voice and data concepts, network design, customer premise equipment and central office equipment, modes of transmission, marketing and regulations issues, management of systems, and future directions. No prior technical background required.

MFC 303 Intermediate Data Communications and Networks

Credits: 3
Prerequisites: MFC 301 or permission of instructor
Corequisites: None
Type: LEC
Analyzes the methodologies and components used in communicating voice and data information by means of digital signals. Topics include fundamental concepts; characters and codes; communication lines, fiber optics, and satellite communications; terminals, modems, and interfaces; protocols; local area and packet networks; and network design, devices, and management.

MFC 305 Digital Internetworking

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Analyzes the emerging technologies used in today's networks, emphasizing theory, design, and practical applications. Topics include Digital Technology, TI, Frame Relay, ISDN, and ATM, and applying them to multiprotocol networks. In-depth study of the equipment that comprises a network, including high-speed multiplexers, routers, FRADs, and switches.

MFC 307 Intermediate Local Area Networking

Credits: 3
Prerequisites: MFC 218 or MFC 303 or permission of instructor
Corequisites: None
Type: LEC
Focuses on the products, problems, and trends involved in designing, implementing, and maintaining PC-based local area networks (LANs) for distributed application processing. Students learn concepts and techniques that enable them to become qualified participants in LAN projects.

MFC 308 Telecommunications Management

Credits: 3
Prerequisites: MFC 301
Corequisites: None
Type: LEC
Exposes students to various elements of telecommunications management, ranging from "selling" the project internally to vendor selection, RFP composition, project implementation, and management of the system after installation. Encourages development of basic analytical skills, including problem diagnosis, financial analysis, and overall project development. Strong writing skills are helpful.

MFC 310 Project Analysis and Design

Credits: 3
Prerequisites: MFC 101; MFC 115 or MFC 118; or permission of instructor
Corequisites: None
Type: LEC
Introduces business systems analysis. Topics include project initiation, preliminary and detailed investigation and analysis, design of systems 1/0, file design, systems processing, and controls. The laboratory segment focuses on the use of these tools and techniques to develop the system life cycle and prepare feasibility reports, walk-through exercises, system approval, and follow-up, and the use of CASE tools to supplement the required test material.

MFC 312 Database Management Systems

Credits: 3
Prerequisites: MFC 101, or MFC 118 and at least a one-semester course in a programming language, or permission of instructor
Corequisites: None
Type: LEC
Examines fundamental database concepts and architecture, with an emphasis on commercially available systems. Topics include critical evaluation of important implementation issues, approaches, and alternatives in a relational database environment. Projects are completed using the university mainframe computers; however, multiple platform experimentation is assigned to provide background in available software, such as ORACLE. Database languages include SQL, QMF, and subsequent Query languages implemented on specific systems.

MFC 318 Microcomputer Applications III

Credits: 3
Prerequisites: MFC 218 or equivalent
Corequisites: None
Type: LEC
Provides advanced-level studies in the design and implementation of computer applications based on relational database management systems. Focuses on systems theory design and programming in a Windows-based DBMS language. Topics include design methodologies, application generation, and interface with other Windows-based programs using Access. Students prepare, design, and implement several projects that cover all major issues.

MFC 320 Entrepreneurship and the Small Business

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines main characteristics of effective small-business operations. Skills and characteristics of the entrepreneur, forms of ownership, location, financing, organization, supervision, and marketing.

MFC 331 Financial Controls for Small Businesses

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines basic accounting practices and tax issues, emphasizing applications for small businesses. Purpose, design, and use of various financial documents; costs and inventory controls; creation and use of financial statements; tax liability and consequences; forms of revenue, costs, depreciation, and investments; daily operations; and tax planning.

MFC 332 Paralegal Principles and Procedures

Credits: 4
Prerequisites: None
Corequisites: None
Type: LEC
For employed paralegals or other legal workers or students interested in becoming paralegals. Students learn skills necessary to increase billable hours and productivity. Covers legal analytical research and writing, using legal terminology, professional legal writing of interoffice memos, civil pleadings, and discovery motions. Other topics covered are Evidence Preservation, Interviewing and Investigation, Introduction to Torts, Contracts, Criminal Law, Rules of Civil and Appellate Procedure, and Rules of Ethics for Paralegals.

MFC 333 Small Business Plan and Sources of Capital

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Components of a business plan for launching or expanding small businesses. Students communicate a detailed description of the entrepreneurial idea, develop methodologies used in strategic planning, locate and evaluate various types of capital sources for financing a small business (e.g., bank financing, investors, agency financing, and customer/employee financing), and construct a formal business plan.

MFC 336 Bankruptcy Law

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Basics of bankruptcy law as an introducory bankruptcy manual for legal assistants. Ranges from detailed procedural aspects of common bankruptcy litigation practice to the policy and history behind bankruptcy law. Describes the differences of each chapter of bankruptcy code, the impact of the substantive rights and duties of the parties within each chapter, and appropriate procedures and deadlines to protect such rights. Also covers basic literature issues such as stay relief, avoidance actions, dismissals, nondischargeables and confirmation matters. Students draft the basic court documents (Chapter 7, 11, 13 and petitions) as well as basic bankruptcy litigation complaints.

MFC 337 Promoting the Small Business

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Small businesses usually require promotional strategies different from those used in promoting larger ventures. Examines the market characteristics of various types of small businesses, and strategies that may be effective in promoting customer acceptance of their products and services.
MFC 338 Marketing Strategies
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Students learn the fundamentals of developing an effective marketing plan, profiling a target market, analyzing competition, differentiating and positioning a product/service, understanding the market's decision-making process, developing effective distribution and communication strategies, and understanding buyer behavior and how to improve sales performance.

MFC 339 Introduction to Oracle
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Utilizing the Oracle Database 10G Express Edition, students will learn the fundamentals of Relational Database Systems Management. This includes installation and configuration, command line management of the database including table, query, user creation and management. The course will then focus on using database development tools to begin developing database driven applications to ease data entry, management, and reporting. Course is intended for students with little to no prior database experience. A technical discipline is required to understand the more fundamental technology concepts. No programming experience is required.

MFC 340 Business Issues for Women and Minorities
Credits: 1
Prerequisites: None
Corequisites: None
Type: SEM
Mini-course that offers women and minorities comprehensive business start-up information. Includes information for new owners, funding sources, special opportunities and guest speakers on pertinent topics.

MFC 341 Interviewing Techniques for Personnel Administrators
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Types of interviewing (structured and nonstructured, stress, single, group, etc.) and their uses in hiring, evaluation, termination, and other day-to-day areas of personnel administration; and legal and ethical restrictions on questioning. Exercises emphasize practical skills.

MFC 342 Performance Appraisal
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Nature, rationale, and methods of implementing various types of systems used in evaluating and recording an employee's performance; systems examined range from numerical rating scales to management by objective based systems, and performance versus developmental appraisals; exercises in developing and testing various systems.

MFC 343 Grievance Administration
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Employee grievance and grievance procedure within the framework of personnel policy, grievance investigation, how to argue a case and write a response, steps within a grievance, union and nonunion procedures, case studies and exercises in writing and answering grievances.

MFC 344 Personnel Records Systems
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Assists personnel staff in determining which types of records should be maintained in developing appropriate records-maintenance systems; medical records; references and reference checking; legal requirements and restrictions, including right of access; and computer-based records systems.

MFC 345 Compensation Administration
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Overview of wage and salary administration for persons seeking a general knowledge of the field; job analysis, pricing, salary, and benefit structure; emphasizes writing job descriptions and on locating sources of salary information.

MFC 346 Diversity in the Workplace
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Explores the changing demographics of the work force and strategies by which the potentials of diversity can be realized toward individual and organizational goals. Examines the process of change, change styles, and methods of encouraging change; conflict and conflict resolution; and cultural bias and methods of managing the organizational assets that exist in individual and group differences.

MFC 347 OSHA-on-the-Job Safety Programs
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Concepts, issues, and approaches to occupational safety; federal and state regulations; legal and ethical responsibilities of industry; inspections; organization of safety committees; and safety awareness and training programs.

MFC 348 Benefits Administration
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Overview and approaches to the design and administration of employee benefits programs, including statutory benefits (unemployment, workers' compensation, disability, and social security), life and health insurance, pay for time not worked, retirement plans, Assessment of costs and impact for the employer and employee; communicating benefits information to employees.

MFC 354 Regulation in the Health-Care Environment
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
The New York State health-care industry is one of the most regulated employers in the United States. Regulations permeate and control the entire system: hospitals; long-term care facilities; home health agencies; physicians, nurses, and care givers; insurance companies; ambulatory care facilities; and others. How a provider or facility functions and what services can be provided are determined by regulation or through the regulatory processes presented from the perspective of both the Department of Health and the specific providers.

MFC 355 Health-Care Data and its Uses
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Examines contemporary issues facing management and administration in a changing and expanding health-care environment. How to integrate and apply learned leadership skills in a total quality management concept.

MFC 356 First-Party Reimbursement
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Introduces and defines managed care as it relates to each component of the health-care delivery system. Designed to be highly interactive; representatives of various agencies of the delivery system share their perspectives and experience. Intended for clinicians, managers, and supervisors in health-care organizations.
MFC 365 Basic Real Estate Law

Credits: 1  
Prerequisites: None  
Corequisites: None  
Type: LEC  
The basics of real estate law emphasizing New York State real estate law and the practice and custom of real estate law in WNY. Students learn the key issues in representing the parties to a real estate transaction—the buyer, the seller, and the bank. Provides a practical approach to understanding real estate transactions. Students draft the basic real estate documents as well as basic real estate litigation complaints.

MFC 421 Advanced Purchasing Strategies

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Focuses on advanced purchasing techniques. Topics include cost and price analysis, the role of the buyer, international purchasing, the Robinson-Patman Act and other regulations, manual procedures, and computerized systems.

MFC 422 Fundamentals of Contract Management

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Introduces contract management, emphasizing contract formation and other aspects of the pre-award phase. Topics include contract development and contract award, primary contracting agencies and authorities, types of contracts, special contracting situations, bids, negotiation, and award controversies.

MFC 423 Preparation and Negotiation of Contracts for Government and the Private Sector

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Examines the principles and processes of contract negotiation in government and the private sector from establishment of source selection plan, solicitation, proposal preparation, and evaluation, through contract award. Topics include the importance of objectives and thorough preparation, effective negotiation strategies and tactics, players and roles, conventions and ethics, contract adjustment, and other post-award actions. Utilizes case studies and exercises to develop planning and negotiation skills.

MFC 424 Law of Procurement for Government and the Private Sector

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Analyzes not only the laws that regulate procurement in the public and private sector, such as the Uniform Commercial Code (UCC) and Federal Acquisition Regulations (FAR), but also those that regulate business relationships that arise from contractual agreements. Overview of the legal basis and policy implications of the government’s authority to enter into contracts for the acquisition of goods and services. Topics include contract types, methods of contracting, remedies for unsuccessful offers, contract modifications, terminations, inspection, acceptance and warranty, claims, and remedies. Contracts social goals of the federal procurement law with the utilization and substitution of the UCC.

MFC 425 Logistics and Distribution Management

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Focuses on the transportation of supplies to the producer and from the producer to the consumer. Topics include warehousing, physical distribution, inventory control, transportation logistics, and newer types of inventory systems designed for more effective cost control.

MFC 426 Production Planning

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Examines plant location and layout, machine and workforce capacities, and other factors involved in production design. Topics include approaches used in production planning and timing, and their integration with the managerial objectives of the firm; as well as concepts used by engineers to measure and improve productivity, including job analysis, project management, and quality control.

MFC 427 Contract Price Analysis

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Overview of various approaches to cost/price analysis and their roles in government acquisitions. Topics include quantitative methods of analyzing and forecasting costs, pricing practices and theory used by private industry, analyzing direct and indirect costs, the use of weighted guidelines, fact-finding and negotiation techniques, the Truth in Negotiations Act, cost accounting standards, and special-pricing problems.

MFC 428 Contract Administration: Post-Award

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Focuses on issues that affect the administration of government contracts from the time of award through closeout. Topics include contract interpretation; risk allocation; changes, delays and adjustments; differing site conditions; inspection; acceptance; warranties; disputes; payment; and discharge decisions, with specific reference to mental health patients, children, and the elderly.

MFC 448 Regulatory Aspects of Medical Devices

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Intended for students interested in a career in the life sciences products industry. Covers U.S. and international regulatory requirements for medical devices and drugs, as applied to bench research, animal testing, clinical testing, manufacturing, sterilization, and post-market surveillance. Presents key regulatory concepts and practical applications that are necessary to understand the historical context of medical product regulations and to have a working knowledge of the current requirements placed on product development, manufacturing, and use in the U.S. and other major markets in the world.

MFC 450 Strategic Planning and Budgeting for Health-Care Departments

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Strategic planning and budgeting emphasizing the department within the health-care facility, as well as the relationship of the departmental plan and budget to that of the organization as a whole. Topics include stages in the development of a strategic plan; factors to be considered; how the plan may be presented, implemented, and revised; the relation of planning to budgeting; and the budget cycle and its components.

MFC 451 Human Resources Issues for Health-Care Managers

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Introduces the management of human resources for clinicians and supervisors of health-care units. Key course components include leadership principles and styles, motivational theory, communication skills, counseling and corrective action, performance appraisal, management of change, and work groups and labor relations. Emphasizes the application of theory to practical day-to-day supervision in the workplace. Roundtable discussions by participants facilitate sharing of health-care management experiences.

MFC 452 Quality Management in Health Care

Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Introduces the basic components of a quality-management program within the health-care industry. Lecture, discussion, case studies, and projects develop familiarity with the principles of quality management interventions applicable to settings ranging from individual departments to small health-related businesses. Emphasizes implementing team concepts to foster customer-oriented health-care systems.

MFC 481 Special Topics

Credits: 1  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Topic of interest.

MFC 482 Special Topics

Credits: 1  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Topic of interest.

MFC 483 Special Topics

Credits: 1  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Topic of interest.
MFC 484 Liability Issues in Public Education

Credits: 3
Prerequisites: None
Type: LEC
Current legal issues in public education for students interested in becoming teachers, school counselors, or school administrators. Topics include student rights, teacher rights, union matters, litigation issues, and school safety. These topics must be understood in order to correctly evaluate school climate and maximize student achievement.

MFC 499 Independent Study

Credits: 1
Prerequisites: None
Corequisites: None
Type: TUT
For adult students who wish to work independently under the direction of a faculty member on a special academic problem or project that cannot be undertaken through a regular departmental independent study course (e.g., APY 499). To enroll, the student must obtain approval of a university faculty member or an approved adjunct faculty member willing to oversee the project, and must submit a written outline of the proposed course of study for approval by MFC staff. For details, application forms, and deadlines, contact Millard Fillmore College at (716) 829-3131.

MUS 105 Elementary Harmony and Counterpoint I

Credits: 4
Prerequisites: None
Corequisites: None
Type: LEC/LAB
Develops skills and techniques necessary for aural and written comprehension of linear, melodic, harmonic, rhythmic, and formal aspects of eighteenth- and nineteenth-century music.

MUS 106 Elementary Harmony and Counterpoint II

Credits: 4
Prerequisites: None
Corequisites: None
Type: LEC/LAB
Continuation of MUS 105.

MUS 109 Master Composer

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies the life and times of a single composer or a group of composers. Designed for the nonmajor. Requires no background in music.

MUS 110 Seminar in Music History

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies a specific area of the history of music. Topics change with each offering. Specifically designed for nonmajors.

MUS 111 Music in Western Civilization

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
A chronological panorama of Western music from medieval times to the present day for nonmajors; explores and defines underlying social and cultural conditions with resultant parallels between music and other arts.

MUS 112 Music in Western Civilization

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
A chronological panorama of Western music from medieval times to the present day for nonmajors; explores and defines underlying social and cultural conditions with resultant parallels between music and other arts.

MUS 113 Music and Society

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
The relationship between music and twentieth-century American society. Examines art, folk, and commercial music in an attempt to uncover musical meaning, both as a reflection of and stimulus for social change. Requires no prior experience or training.

MUS 114 Genres of Music

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies one of the historically established musical forms, such as opera, concerto, symphony, quartet, computer music, or film music; lectures and listening assignments. Nonmajors; no prerequisites.

MUS 115 Understanding Music

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
History of musical style from the Renaissance to the present day. Examines selected masterpieces of Western music as well as such recent phenomena as serialism, minimalism, electronic, and computer music; requires no previous formal training in music.

MUS 116 Theory of Music for Nonmajors

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Elements of writing music; melody, rhythm, intervals, chords, harmony, tone color, and styles of musical expression. Music signs and symbols; traditional language of “tonal” music, with examples drawn from popular and classical music. No prerequisites.

MUS 117 Pop Music-Ragtime to Rock

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Lectures, recorded musical examples, and handouts both explain and describe the roots of American popular music as found in Early American, European, African, Latin American, and African American cultures.

MUS 118 Pop Song in America

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Fosters sensitivity to and familiarity with American popular song of this century. We study, listen to, and discuss popular songs as an indicator of the mores and sentiments of America. Highlights the combined efforts of composer, lyricist, vocalist, instrumentalist, and arranger.

MUS 121 University Chorus

Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Open to all members of the university community without audition; often performs major works with orchestra.

MUS 130 UB Marching Band

Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Open to all members of the university community without audition; performs in support of athletic events and other campus activities.

MUS 131 UB Concert Band

Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
We rehearse and perform traditional and nontraditional band literature; one or two public concerts given each semester. Membership is drawn from all schools and departments of the university; open by audition.

MUS 133 Marching Band Drill Design and Orchestration

Credits: 3
Prerequisites: None
Corequisites: None
Type: TUT
This course provides thorough instruction in the compositional techniques of marching band drill design and orchestration. The course will contain basic theory and diagrammed applications of the Precision Drill System and Philosophy including, but not limited to, music rhythmic applications, drill animation, positioning, instrumental orchestration, labeling, and visual staging. The student will become well-versed in the diagramming, plotting and orchestration of evolutions, maneuvers, free form, and dynamic free form applications in conjunction with musical examples. Upon successful completion of the course, the student will be well-versed in the fundamental principles involved in the visual design, orchestration, and labeling aspects of exhibition marching.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Corequisites</th>
<th>Type</th>
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<tr>
<td>MUS 134</td>
<td>Fundamentals of Exhibition Marching</td>
<td>3</td>
<td>None</td>
<td>None</td>
<td>LEC</td>
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<td>MUS 138</td>
<td>UB Symphony Orchestra</td>
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<td>MUS 143</td>
<td>UB Percussion Ensemble</td>
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<td>University Choir</td>
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<td>LAB</td>
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<td>MUS 156</td>
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<td>Organ</td>
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<td>Voice</td>
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<td>World Music</td>
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<td>Rock Music</td>
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<td>MUS 300</td>
<td>Music Pluralism Since 1900</td>
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</table>

Detailed course descriptions:

**MUS 134 Fundamentals of Exhibition Marching**
- Credits: 3
- Prerequisites: None
- Corequisites: None
- Type: LEC

This course provides thorough instruction in the fundamental principles of marching and maneuvering. The course contains basic theory and diagrammed applications of the Precision Drill System and Philosophy including, but not limited to, music rhythmic applications and eurhythms. The student will gain insight into the diagramming, plotting, and directing of evolutions, maneuvers, free form, and dynamic free form applications. Upon successful completion of the course, the student will be well versed in the fundamental principles involved in the visual aspects of exhibition marching. The goals is to prepare students for their role as drill instructors and design consultants for the UB Marching Band and any or all applications of visual choreography associated with athletic bands.

**MUS 138 UB Symphony Orchestra**
- Credits: 2
- Prerequisites: None
- Corequisites: None
- Type: LAB

There are students from several different majors in our orchestra, and we encourage participation of everyone (regardless of their major) interested in playing some or all applications of visual choreography associated with athletic bands.

**MUS 143 UB Percussion Ensemble**
- Credits: 2
- Prerequisites: None
- Corequisites: None
- Type: LAB

The ensemble studies and performs repertoire from the early big band swing period to today's big band contemporary and fusion sounds. Emphasis is on ensemble playing as well as improvisational soloing.

**MUS 151 University Choir**
- Credits: 2
- Prerequisites: None
- Corequisites: None
- Type: LAB

A select vocal ensemble that performs a variety of choral literature; open to all students of the university by audition.

**MUS 155 Basic Keyboard**
- Credits: 2
- Prerequisites: None
- Corequisites: None
- Type: LAB

Functional piano, harmonization of melodies, scales, sight reading, accompanying, and preparation of pieces at various difficulty levels. Music majors only.

**MUS 156 Jazz Ensemble: Big Band**
- Credits: 2
- Prerequisites: None
- Corequisites: None
- Type: LAB

Traditional big band consisting of a reed section (saxes with some doubles on flute and clarinet), a brass section (trumpets and trombones), and a rhythm section (piano, guitar, bass, drums and vibes). The band studies and performs repertoire from the early big band swing period to today's big band contemporary and fusion sounds. Emphasis is on ensemble playing as well as improvisational soloing.

**MUS 157 Jazz Ensemble: Combo**
- Credits: 2
- Prerequisites: None
- Corequisites: None
- Type: LAB

Two ensembles are available: Jazz Ensemble Combo (JEC) and an Advanced (JE) Combo. The JEC performs and studies repertoire of the great jazz combos throughout the history of jazz including Art Blakey and the Jazz Messengers, Horace Silver, Cannonball Adderley, and many others. Some jazz vocalists are encouraged to audition for this class. The Advanced JE is a contemporary ensemble that performs very demanding and challenging music of this idiom. A prerequisite is an advanced level of improvisational skills, as well as compositional experience. Transcriptions and the creation of original compositions are integral components of this ensemble.

**MUS 159 Piano**
- Credits: 2
- Prerequisites: None
- Corequisites: None
- Type: LAB

Private piano study. Audition required.

**MUS 160 Piano**
- Credits: 2
- Prerequisites: None
- Corequisites: None
- Type: LAB

Private piano study. Audition required.

**MUS 163 Organ**
- Credits: 2
- Prerequisites: None
- Corequisites: None
- Type: LAB

Private organ study. Requires audition.

**MUS 164 Organ**
- Credits: 2
- Prerequisites: None
- Corequisites: None
- Type: LAB

Private organ study. Requires audition.

**MUS 169 Voice**
- Credits: 2
- Prerequisites: None
- Corequisites: None
- Type: LAB

Private voice study. Requires audition.

**MUS 170 Voice**
- Credits: 2
- Prerequisites: None
- Corequisites: None
- Type: LAB

Private voice study. Requires audition.

**MUS 205 Jazz Theory**
- Credits: 3
- Prerequisites: MUS 105-MUS 106 or permission of instructor
- Corequisites: None
- Type: LEC

Various approaches to analyzing jazz: variation techniques and the improvised line.

**MUS 206 Music in the Movies**
- Credits: 3
- Prerequisites: None
- Corequisites: None
- Type: LEC

Examines film music, considered within its chronological, thematic, and cultural contexts. Devotes class time to the presentation of classic or representative films in the history of film scoring, relevant musical material and concepts, and the basic vocabulary of music and film criticism. No prerequisites; requires no previous musical experience.

**MUS 211 Intermediate Harmony and Counterpoint I**
- Credits: 5
- Prerequisites: None
- Corequisites: None
- Type: LEC/LAB

Builds on the foundation of first-year theory (MUS 105-MUS 106), systematically incorporates chromatic harmonic theory (MUS 105-MUS 106), and integrates chordal vocabulary with larger formal processes.

**MUS 212 Intermediate Harmony and Counterpoint II**
- Credits: 5
- Prerequisites: None
- Corequisites: None
- Type: LEC/LAB

Builds on the foundation of first-year theory (MUS 105-MUS 106), systematically incorporates chromatic harmonic theory (MUS 105-MUS 106), and integrates chordal vocabulary with larger formal processes.

**MUS 213 Music History Survey I**
- Credits: 3
- Prerequisites: None
- Corequisites: None
- Type: LEC

Chronological survey of music from ancient to baroque period.

**MUS 214 Music History Survey II**
- Credits: 3
- Prerequisites: MUS 213
- Corequisites: None
- Type: LEC

Chronological survey of music, continuing from the late baroque to twentieth century.

**MUS 221 Vocal Diction**
- Credits: 2
- Prerequisites: None
- Corequisites: None
- Type: LEC

Principles of pronunciation, enunciation, and articulation of Italian, French, and German texts, as related to solo vocal literature. Required of all voice students enrolled in primary study; open to pianists and, by permission of instructor to nonmajors.

**MUS 264 World Music**
- Credits: 3
- Prerequisites: None
- Corequisites: None
- Type: LEC

Introduces the student to music from all over the world, and expands concepts of music in the process. Students learn about different instruments from other cultures and how they influence the music they produce, and explore common features of Asian, European, African, American, and Oceanic music. Students also learn different ways of listening. Designed for non-majors. Requires no musical background.

**MUS 265 Rock Music**
- Credits: 3
- Prerequisites: None
- Corequisites: None
- Type: LEC

Examines the varied musical repertoires that are known collectively as rock, and considers those musical forms that influenced the early history of rock (blues, rhythm and blues, country) and those that have had an influence throughout its development (experimental electronics, classical jazz). Analyzes rock music as both a musical and a sociological phenomenon. Topics include rock aesthetics, musical sub-cultures, music and film, music and politics, the business of rock, and the impact of American/British rock on world musical cultures. Requires no previous experience or training in music.

**MUS 300 Music Pluralism Since 1900**
- Credits: 3
- Prerequisites: None
- Corequisites: None
- Type: LEC

Surveys principal composers and compositional issues native to the U.S., focused through studying and discussing the music and words of such figures as Charles Ives, George Gershwin, Elliott Carter, Morton Feldman, and Steve Reich. Listening and reading assignments. Requires no prior musical training.
MUS 301 Introduction to Musical Theatre

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Historical view of the interrelationship of music in the theatre; liturgical drama; the masque; opera; operetta; musical comedy; and music for drama, dance, films, and other forms of mixed media.

MUS 305 Counterpoint 16th Century

Credits: 3
Prerequisites: MUS 212 or permission of instructor
Corequisites: None
Type: LEC
Sixteenth-century vocal style through analyzing and composing music in two and three parts; music of Palestrina.

MUS 311 Master Composer

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies the life and works of a single master composer or group of composers.

MUS 313 American Music

Credits: 3
Prerequisites: MUS 115
Corequisites: None
Type: LEC
Surveys American music from Colonial times to the present with special emphasis on twentieth-century music.

MUS 314 Chamber Music Literature

Credits: 2
Prerequisites: None
Corequisites: None
Type: LEC
Studies a segment of the vast catalog of chamber music literature. Content may change each semester, and cover a specific school, composer, style, or ensemble instrumentation. Requires a final paper and/or a final exam on repertoire.

MUS 321 University Chorus

Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Open to all members of the university community without audition; often performs major works with orchestra.

MUS 324 Piano Literature

Credits: 2
Prerequisites: None
Corequisites: None
Type: LEC
Literature of the piano covering works of one composer, several composers, a particular form or period. Requires a final paper and/or a final exam on repertoire. Required of piano majors; nonmajors may take the course by permission of instructor.

MUS 330 UB Pep Band

Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Same as MUS 130.

MUS 331 UB Symphony Band

Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Same as MUS 131.

MUS 333 Opera History

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Surveys the principal opera composers and their works.

MUS 334 UB Percussion Ensemble

Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Same as MUS 143.

MUS 338 UB Symphony Orchestra

Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
There are students from several different majors in our orchestra, and we encourage participation of everyone (regardless of their major) interested in playing some of the best music ever written. Eligible members of the orchestra will be invited to take instrumental lessons for free with the distinguished faculty of the UB Music Department.

MUS 340 Chamber Music

Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Music majors and interested performers may study and perform the chamber music repertoire. This can include such combinations as piano duo, string quartet, wind quintet, vocal duets and many other instrumental ensembles. Admission by audition.

MUS 341 History of Jazz I

Credits: 3
Prerequisites: MUS 115-MUS 116, MUS 213 or permission of instructor
Corequisites: None
Type: LEC
From 1917 to the present; basic issues of musical structure that interest different genres and periods (form, improvised variation, blues, the vocal); assumes elementary analysis and basic understanding of music notation.

MUS 343 Elements of Conducting I

Credits: 3
Prerequisites: one year of music theory
Corequisites: None
Type: LEC
Fundamental conducting and rehearsal techniques. Participation in performing ensembles expected.

MUS 344 Elements of Conducting II

Credits: 3
Prerequisites: one year of music theory
Corequisites: None
Type: LEC
Fundamental conducting and rehearsal techniques. Participation in performing ensembles expected.

MUS 350 UB Opera Studio

Credits: 2
Prerequisites: None
Corequisites: None
Type: TUT
Provides an opportunity to sing in a fully-staged opera as well as concert performances with orchestra. Opera Studio also affords students classes in acting, musical coaching, and scene work in their original languages. Special guest artists make presentations based on availability. Open by audition only.

MUS 351 University Choir

Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Same as MUS 151.

MUS 356 Jazz Ensemble: Big Band

Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Same as MUS 156.

MUS 357 Jazz Ensemble: Combo

Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Same as MUS 157.

MUS 359 Jazz Ensemble: Latin

Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Same as MUS 159.

MUS 360 Jazz Ensemble: Afro-Cuban

Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Same as MUS 160.

MUS 361 Jazz Ensemble: Blues

Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Same as MUS 161.

MUS 362 Jazz Ensemble: Contemporary

Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Same as MUS 162.

MUS 364 Jazz Ensemble: Jazz Band

Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Same as MUS 164.

MUS 365 Jazz Ensemble: Latin American

Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Same as MUS 165.

MUS 366 Jazz Ensemble: Latin American II

Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Same as MUS 166.

MUS 367 Composition Seminar

Credits: 2
Prerequisites: MUS 106
Corequisites: None
Type: SEM
Two-semester course for students interested in composition. Explores the history and practice of electronic music, synthesizer music, and computer music. Examines experimental, rock, and other popular forms. Students learn basic studio techniques, synthesis/sound manipulation techniques, and psychoacoustic principles.

MUS 401 Introduction to Electronic Music I

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Two-week course for students interested in music produced by electronic means. Explores the history and practice of electronic music, synthesizer music, and computer music. Examines experimental, rock, and other popular forms. Students learn basic studio techniques, synthesis/sound manipulation techniques, and psychoacoustic principles.

MUS 402 Introduction to Electronic Music II

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Two-semester course for students interested in music produced by electronic means. Explores the history and practice of electronic music, synthesizer music, and computer music. Examines experimental, rock, and other popular forms. Students learn basic studio techniques, synthesis/sound manipulation techniques, and psychoacoustic principles.

MUS 407 Composition

Credits: 4
Prerequisites: MUS 400
Corequisites: None
Type: TUT
Writing and analysis under professional guidance in private consultations and class discussions. Students must present examples of their work and are accepted by permission of instructor. May be repeated for credit.

MUS 408 Genres of Music

Credits: 4
Prerequisites: MUS 213-MUS 214
Corequisites: None
Type: LEC
Studies one of the historically established musical forms, such as opera, concerto, symphony, quartet; lectures and listening assignments. Music majors only or by permission of instructor.
MUS 409 Music of the Middle Ages

Credits: 3
Prerequisites: MUS 213-MUS 214
Corequisites: None
Type: LEC
Western music from Gregorian chant to the fourteenth century.

MUS 410 Music of the Renaissance

Credits: 3
Prerequisites: MUS 213-MUS 214
Corequisites: None
Type: LEC
Music from Dunstable and the Burgundian School to the end of the sixteenth century.

MUS 411 Music of the Baroque Era

Credits: 3
Prerequisites: MUS 213-MUS 214
Corequisites: None
Type: LEC
Music from Monteverdi to J. S. Bach.

MUS 412 Music of the Classical Period

Credits: 3
Prerequisites: MUS 213-MUS 214
Corequisites: None
Type: LEC
Music of Mozart, Haydn, Beethoven, contemporaries.

MUS 413 Music of the Romantic Period

Credits: 3
Prerequisites: MUS 213-MUS 214
Corequisites: None
Type: LEC
Nineteenth-century music from Schubert to Mahler.

MUS 414 Music of the Twentieth Century

Credits: 3
Prerequisites: MUS 213-MUS 214
Corequisites: None
Type: LEC
Music from Debussy to the present.

MUS 416 Counterpoint Eighteenth Century

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Eighteenth-century counterpoint practice; requires writing compositions in this style. LEC

MUS 421 Vocal Literature

Credits: 2
Prerequisites: voice study at 400 level
Corequisites: None
Type: LAB
Solo vocal literature from 1600 to the present; recommended for all voice students enrolled in primary study; open by permission of instructor to nonmajors.

MUS 437 Analysis of Tonal Music

Credits: 3
Prerequisites: MUS 211-MUS 212
Corequisites: None
Type: LEC
Masterworks of all periods; technical means employed in composition.

MUS 438 Analysis of Twentieth-Century Music

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Analytical studies covering a variety of twentieth-century Western musical styles. LEC

MUS 439 Seminar in Music History

Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Pulls upper-level music history requirements of B.A. students preparing a senior thesis. May cover various aspects of music history according to the student's individual needs.

MUS 447 Contemporary Ensemble

Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
A select group of performers (instrumental and vocal) who study and perform new music of the twentieth century.

MUS 450 Senior Thesis

Credits: 4
Prerequisites: None
Corequisites: None
Type: SEM/TUT
A select group of performers (instrumental and vocal) who study and perform new music of the twentieth century.

MUS 451 Trombone

Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Private trombone study. Audition required.

MUS 452 Trombone

Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Private trombone study. Audition required.

MUS 453 Tuba

Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Private tuba study. Audition required.

MUS 454 Tuba

Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Private tuba study. Audition required.

MUS 455 Percussion

Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Private percussion study. Audition required.

MUS 456 Percussion

Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Private percussion study. Audition required.

MUS 459 Piano

Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Private piano study. Audition required.

MUS 460 Piano

Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Private piano study. Audition required.

MUS 461 Harp

Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Private harp study. Audition required.

MUS 462 Harp

Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Private harp study. Audition required.

MUS 463 Organ

Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Private organ study. Audition required.

MUS 464 Organ

Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Private organ study. Audition required.

MUS 465 Harpsichord

Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Private harpsichord study. Audition required.

MUS 466 Harpsichord

Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Private harpsichord study. Audition required.

MUS 467 Guitar

Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Private guitar study. Audition required.

MUS 468 Guitar

Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Private guitar study. Audition required.

MUS 469 Voice

Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Private voice study. Audition required.

MUS 470 Voice

Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Private voice study. Audition required.

MUS 471 Violin

Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Private violin study. Audition required.

MUS 472 Violin

Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Private violin study. Audition required.

MUS 473 Viola

Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Private viola study. Audition required.
MUS 474 Viola
Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Private viola study. Audition required.

MUS 475 Cello
Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Private cello study. Audition required.

MUS 476 Cello
Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Private cello study. Audition required.

MUS 477 Double Bass
Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Private double bass study. Audition required.

MUS 478 Double Bass
Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Private double bass study. Audition required.

MUS 479 Saxophone
Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Private saxophone study. Audition required.

MUS 480 Saxophone
Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Private saxophone study. Audition required.

MUS 481 Flute
Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Private flute study. Audition required.

MUS 482 Flute
Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Private flute study. Audition required.

MUS 483 Oboe
Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Private oboe study. Audition required.

MUS 484 Oboe
Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Private oboe study. Audition required.

MUS 485 Clarinet
Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Private clarinet study. Audition required.

MUS 486 Clarinet
Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Private clarinet study. Audition required.

MUS 487 Bassoon
Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Private bassoon study. Audition required.

MUS 488 Bassoon
Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Private bassoon study. Audition required.

MUS 489 French Horn
Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Private French horn study. Audition required.

MUS 490 French Horn
Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Private French horn study. Audition required.

MUS 491 Trumpet
Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Private trumpet study. Audition required.

MUS 492 Trumpet
Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Private trumpet study. Audition required.

MUS 499 Independent Study
Credits: 1
Prerequisites: None
Corequisites: None
Type: TUT
Open to music majors engaged in special study or research in areas not covered by regular courses; permission of the supervising faculty member.

Music Theater

MTR 210 Musical Theatre Repertory 1
Credits: 3
Prerequisites: Sophomore MTR majors or permission of instructor
Corequisites: None
Type: SEM
Introduces the student to music theatre song literature from 1959/1960 to the present with concurrent exploration and development of the skills needed to create a music theatre song performance.

MTR 220 Musical Theatre Dance I
Credits: 3
Prerequisites: THD 213, THD 263, or permission of instructor
Corequisites: None
Type: SEM
Basic music theatre dance from the late nineteenth century to the present. Classwork coordinates dance styles with shows from each period.

MTR 250 Special Topics in Music Theatre
Credits: 1
Prerequisites: Music Theatre majors or permission of instructor
Corequisites: None
Type: SEM
Specialized aspects of the musical theatre. Usually includes literary and/or historical content in addition to practical technique work. Content varies from semester to semester.

MTR 302 Musical Theatre History
Credits: 3
Prerequisites: sophomore standing or above
Corequisites: None
Type: LEC
Explores the development of music theatre forms. Includes the contributions of composers, lyricists, and librettists, as well as cast members, directors, choreographers, and designers; and employs audio and video materials.

MTR 305 Music Theatre Workshop
Credits: 3
Prerequisites: MTR 210 or permission of instructor
Corequisites: None
Type: SEM
Develops audition and performance techniques. Includes vocal coaching, résumé writing, musical theatre scene study, and mock auditions. Uses videotape for critical analysis of student progress.
MTR 320 Musical Theatre Dance II
Credits: 3
Prerequisites: MTR 220; THD 214 or THD 341; and THD 264 or THD 371; or permission of instructor
Corequisites: None
Type: SEM
History of American show dance emphasizing style and practical application of knowledge. Continuation of MTR 220 concentrating on technical expertise as well as historical knowledge.

MTR 350 Special Topics in Music Theatre
Credits: 3
Prerequisites: Music Theatre majors or permission of instructor
Corequisites: None
Type: SEM
Specialized aspects of the musical theatre. Usually includes literary and/or historical content in addition to practical technique work. Content varies from semester to semester.

MTR 405 GEMMS Musical Theatre Company
Credits: 1
Prerequisites: audition or permission of instructor
Corequisites: None
Type: SEM
Professional performance experience in musical theatre production; working through the process from rehearsals to a staged production.

MTR 410 Musical Theatre Repertoire 2
Credits: 3
Prerequisites: MTR 210, MTR majors, or permission of instructor.
Corequisites: None
Type: SEM
Introduces the student to music theatre song literature from 1866 to 1939 and continues to build on music theatre song performance skills begun in MTR 210.

MTR 420 Musical Theatre Scene Study
Credits: 3
Prerequisites: MTR 210, MTR 302, TH 209, one semester of vocal instruction, or permission of instructor
Corequisites: None
Type: SEM
Develops scene analysis, script preparation, and rehearsal techniques specifically geared toward musical theatre performance. Explores texts from the classical and contemporary repertory. Emphasizes the integration of singing and acting techniques in performance.

MTR 450 Special Topics in Music Theatre
Credits: 1
Prerequisites: permission of instructor
Corequisites: None
Type: SEM
Focuses on a specialized aspect of the musical theatre. Usually includes literary and/or historical content in addition to practical technique work. Content varies from semester to semester.

NMD 113 Human Anatomy
Credits: 4
Prerequisites: None
Corequisites: None
Type: LEC/LAB
Examines the structure and function of organ systems in the human body. Introduces relevant medical terminology.

NMD 210 Introduction to NMT
Credits: 1
Prerequisites: CHE 101
Corequisites: None
Type: SEM/LAB
Explores applications of nuclear medicine career opportunities and current topics within the NMT field. Includes visits to clinical sites, the NMT Program facilities on the South Campus and the University Central Radiopharmaceutical Service facility.

NMD 305 Immunology for NMT
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Reviews basic immunology terminology and principles, including innate versus acquired immunity, antigens, immunogenicity, structural and biological properties of antibodies, antigen-antibody reactions, and tumor immunology.

NMD 321 Basic Radiation Science
Credits: 4
Prerequisites: junior standing in nuclear medicine technology or permission of instructor
Corequisites: None
Type: LEC
Reviews basic immunology terminology and principles, including innate versus acquired immunity, antigens, immunogenicity, structural and biological properties of antibodies, antigen-antibody reactions, and tumor immunology.

NMD 324 Nuclear Medicine Instrumentation
Credits: 4
Prerequisites: NMD 321 and NMD 325, junior standing in nuclear medicine technology
Corequisites: None
Type: LEC/LAB/REC
Examines operating principles of basic and advanced radiation measuring and imaging devices, including sodium-iodide crystal detectors, gamma cameras, and PET Scanners.
NMD 415 Radionuclide Therapy
Credits: 4
Prerequisites: Senior standing in nuclear medicine technology
Corequisites: None
Type: LEC
Covers indications and procedures for all routine approved radionuclide therapies, as well as radiation exposure/protection for the general public from patients receiving these therapies.

NMD 416 Departmental Management for NMT
Credits: 8
Prerequisites: Senior standing in nuclear medicine technology
Corequisites: NMD 322 and NMD 425
Type: LEC
Helps students understand the roles and responsibilities of supervising technologists. Topics covered include quality assurance, hospital accreditation, accreditation specific to nuclear medicine, billing management, staff supervision, informed consent, liability, and malpractice.

NMD 425 Clinical Conference A
Credits: 2
Prerequisites: Senior standing in nuclear medicine technology
Corequisites: None
Type: SEM
Reviews case studies and journal articles, and demonstrates and discusses topics related to the in vivo studies courses and to Clinical Rotations. Requires oral presentations.

NMD 426 Clinical Conference B
Credits: 2
Prerequisites: Senior standing in nuclear medicine technology
Corequisites: None
Type: SEM
Reviews case studies and journal articles, and demonstrates and discusses topics related to the in vivo studies courses and to Clinical Rotations. Requires oral presentations.

NMD 451 Radiopharmacy
Credits: 2
Prerequisites: Junior standing in nuclear medicine technology
Corequisites: None
Type: LEC/REC
Explores the design, production, quality control, and mechanism of radiopharmaceutical localization.

NMD 496 Clinical Rotation
Credits: 12
Prerequisites: Senior standing in nuclear medicine technology
Corequisites: None
Type: LAB
Provides practical experience in various clinical facilities; including static, dynamic, SPECT and PET imaging; in vivo functions studies; instrument operation-gamma cameras and probe devices; health physics, radiopharmaceutical preparation, nuclear cardiology and computerized data systems.

NMD 498 Undergraduate Research
Credits: 1
Prerequisites: Junior Standing
Corequisites: None
Type: TUT
Students will collaborate with a faculty mentor on an ongoing research project or conduct an independent research project under faculty supervision. This project may relate to any aspect of nuclear medicine, including basic science of nuclear medicine or clinical practice.

Nursing

NUR 101 Introduction to Nursing
Credits: 2
Prerequisites: None
Corequisites: None
Type: SEM
Introduces first year nursing students to the nursing profession, the School of Nursing, and the university. Students learn skills required for success in their academic program with an emphasis on the critical thinking process and the varied career paths in the nursing profession.

NUR 102 Careers in the Health Sciences
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
This course will introduce students to various health science disciplines within the University and will assist them in identifying the associated career paths. It will offer informational lectures by various department representatives who will inform students as to the expectations and necessary skills needed for success in each discipline. This course is designed specifically to assist students in choosing a major for a career that meets their personal objectives.

NUR 250 Human Growth and Development
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Examines selected physiological and psychosocial factors that influence and characterize human growth and development throughout the life span. Includes lecture/discussion and class participation activities.

NUR 293 Informatics and the Health Care Environment
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Introduces students to the health care environment emphasizing the interface between the health care delivery system and informatics. Explores various environments where people obtain health care, including clinics, hospitals, and community settings. Students become familiar with health care terminology, government health policies, and the influence of managed care organizations on the health care environment.

NUR 301 Fundamentals of Microbiology
Credits: 4
Prerequisites: College course in biology and chemistry; at least sophomore standing
Corequisites: None
Type: LEC/LAB
This course is a crosslisted section of MIC 301 Fundamentals of Microbiology for nursing majors only.

Introduces principles of microbiology for students of biomedical sciences, biotechnology, medical technology, environmental engineering, and nursing degree programs. Examines the structure and biological functions of microorganisms including bacteria, fungi, viruses, and parasites. Emphasizes the mechanisms by which microorganisms cause diseases in humans. Also includes an immunology unit that introduces the principles and uses of immunology in infectious disease diagnosis and treatment. The laboratory provides hands-on experience in techniques involved in isolation and characterization of microorganisms. Involves three hours of lecture and one three-hour laboratory weekly. Requires laboratory.

NUR 302 Professional Issues in Practice
Credits: 1
Prerequisites: BS/MS nursing student pre-2006
Corequisites: None
Type: SEM
Examines concepts embodied in selected nursing theories and models and how they relate to professional issues in practice. Explores selected issues and dilemmas confronting both the nursing profession and the individual nurse. Also discusses various value systems that operate within the health-care delivery system and that influence professional practice.

NUR 309 Health Assessment: Concepts and Skills
Credits: 4
Prerequisites: Basic, ABS, or RN/BS nursing student
Corequisites: None
Type: LEC/LAB
Prepares students to perform a health assessment on an adult and child. Emphasizes a systematic and comprehensive health assessment as a database for identifying nursing diagnoses. Highlights developmental aspects, sociocultural influences, health-illness perceptions, normal variations of health-status findings, and documentation throughout the course. Students become familiar with the use of assessment instruments through practice in a supervised on-campus laboratory. Must be taken in program sequence.
NUR 310 Assessment of Families and Communities
Credits: 3
Prerequisites: Basic, ABS, or RN/BS nursing student
Corequisites: None
Type: LEC
Focuses on developing and utilizing comprehensive assessments of families and communities. Plans intervention strategies relative to the needs, problems, and level of wellness of the population unit. Must be taken in program sequence.

NUR 348 Introduction to Nursing Research
Credits: 3
Prerequisites: Basic, ABS, or RN/BS nursing student
Corequisites: None
Type: LEC
Introduces students to scientific inquiry in nursing using a formal research approach. Discusses specific elements of the research process including problem identification, literature review, variables, research design, sampling concepts, data collection, data analysis and interpretation. Includes the processes of research dissemination, critique and application. Must be taken in program sequence.

NUR 368 Research in Human Sexuality
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Elective open to non-nursing students. Focuses on current research on human sexual behavior, including physiological response during sexual activity, early development of sexual attitudes, varieties of sexual relationships, and social/moral issues related to sexual attitudes.

NUR 370 Nursing as a Profession
Credits: 3
Prerequisites: Basic, ABS, or RN/BS nursing student
Corequisites: None
Type: LEC
Focuses on nursing as a profession, including its history, current stage of development, and future goals. Emphasizes attributes of the professional nurse and processes essential for competent professional practice, including critical thinking, information-seeking strategies, legal/ethical decision making, and communication skills. Must be taken in program sequence.

NUR 371 Health-Care Delivery Perspectives
Credits: 3
Prerequisites: Basic, ABS, or RN/BS nursing student
Corequisites: None
Type: LEC
Explores the characteristics of health-care delivery systems within a social, political, and economic context. Analyzes issues surrounding health-care delivery and emphasizes the impact of various models of health care on the nursing profession. Must be taken in program sequence.

NUR 372 Health Promotion
Credits: 3
Prerequisites: Basic or ABS nursing student
Corequisites: None
Type: LEC
Introduces the concepts of health promotion as a framework for nursing practice, including health, motivation, therapeutic relationships, populations at risk, and stress management. Provides an opportunity to develop and implement a health-promotion program. Must be taken in program sequence.

NUR 373 Basic Nursing Therapeutics
Credits: 3
Prerequisites: Basic or ABS nursing student
Corequisites: None
Type: LAB
Examines concepts and skills basic to nursing interventions across the life span applicable in a variety of nursing situations. Emphasizes nursing process, documentation, professional responsibility, and therapeutic communication. Also studies pain management, comfort measures, and assistance with activities of daily living. Involves experiences in on-campus laboratory and clinical sites. Must be taken in program sequence.

NUR 374 Primary Care with Families across the Life Span
Credits: 5
Prerequisites: Basic or ABS nursing student
Corequisites: None
Type: LEC
Describes the characteristics of primary health care and its delivery. Examines the nurse’s role in delivery of primary health/community-based services focusing on health promotion, disease prevention, and management of episodic illness. Addresses health risks of age groups across the life span within the context of family, culture, and socioeconomic level. Healthy People Goals and other national initiatives provide direction for developing strategies. Must be taken in program sequence. NUR 374 L must be taken concurrently.

NUR 376 Principles of Nursing Leadership
Credits: 1
Prerequisites: Basic nursing student
Corequisites: None
Type: LEC
Focuses on leadership skills common to clinical, managerial, and professional situations in nursing. Includes content on motivation, decision-making strategies, change theory, situational leadership, power, and conflict management. Must be taken in program sequence.

NUR 377 Issues in Primary Care
Credits: 2
Prerequisites: RN/BS student
Corequisites: None
Type: LEC
Examines the characteristics and delivery of primary care/community-based health care. Identifies health risks of age groups across the life span within the context of family, culture and socioeconomic level. Addresses nursing roles focusing on risk assessment, health promotion, disease prevention, and evidenced-based interventions. Must be taken in program sequence.

NUR 400 Critical Elements in Nursing Research
Credits: 4
Prerequisites: ABS or RN/BS nursing student
Corequisites: None
Type: LEC
Examines concepts characteristic of baccalaureate nursing education: critical thinking, communication, leadership, and management. Integrates leadership and management skills, organizational structure and behavior, case management for at-risk populations, personnel performance appraisal, quality management, planned change, teaching principles, learning, delegating, and health care informatics. Must be taken in program sequence.

NUR 440 Critical Elements in Nursing Leadership
Credits: 1
Prerequisites: Basic or ABS nursing student
Corequisites: None
Type: LEC
Studies clinical situations encountered in NUR 470L Nursing Therapeutics in Health Maintenance and Restoration. Students share clinical reports and raise critical questions regarding practice issues, and propose and evaluate responses. Issues focus on direct care, health-system concerns, and professional interactions at both the client and system levels. Must be taken in program sequence.

NUR 447 Advanced Clinical Nursing
Credits: 3
Prerequisites: Basic or ASB nursing student
Corequisites: None
Type: LEC
Examines nursing management skills and behaviors with applicability in a wide variety of client-care settings. Emphasizes organizational structure and behavior, applying information management and case-management techniques to the management of care for groups of clients, and applying principles of delegation, supervision, and personnel evaluation to management of care provided by others. Must be taken in program sequence.
NUR 473 RN Transition to Baccalaureate Nursing

Credits: 4
Prerequisites: RN/BS nursing student
Corequisites: None
Type: SEM
Focuses on leadership skills and behaviors that nurses apply in a wide range of clinical, managerial, and professional situations. Emphasizes career management, population health/wellness/prevention management, strategic planning, fiscal management, bioinformatics, risk management, and legal, ethical, and malpractice issues. Discusses professional advancement, job satisfaction, and burnout prevention. Also examines organizational frameworks to enhance empowerment in the workplace, cultural competency and diversity in the workplace, genetics and genomics, unions, labor laws, accreditation agencies, and professional influence. Must be taken in program sequence.

NUR 475 Nursing Management in Complex Situations

Credits: 2
Prerequisites: Basic nursing student
Corequisites: None
Type: LEC
Focuses on specific responsibilities of the nurse manager, including information management, human resource management, fiscal management, quality management, and management of change. Students apply critical thinking, decision-making, and leadership skills to studying these areas of responsibility. Must be taken in program sequence.

NUR 477 Clinical Seminar: Complex Acute Care

Credits: 1
Prerequisites: Basic or ABS nursing student
Corequisites: None
Type: SEM
Content derived from clinical situations encountered in NUR 478L Nursing Therapeutics in Complex Acute Care. Students share clinical reports and raise critical questions regarding practice issues and propose and evaluate responses. Issues focus on direct care, health-system concerns, and professional interactions at both the client and system levels. Must be taken in program sequence.

NUR 478 Health Care Management in the Community

Credits: 2
Prerequisites: RN/BS nursing student pre-2006 - NUR 309, NUR 310, NUR 370, NUR 371, NUR 372, NUR 374L, NUR 377 and NUR 440 (may be taken as corequisite)
Corequisites: NUR 440 (may be taken as prerequisite)
Type: LAB
Examines the provision of community-based care in the current managed care environment. Explores concepts of health promotion, health restoration, case management, and rehabilitation in caring for individuals, families, or groups/populations in an assigned community setting.

NUR 479 Baccalaureate RN Leadership Capstone Experience

Credits: 4
Prerequisites: RN/BS nursing student
Corequisites: None
Type: LEC
This clinical laboratory course, designed specifically for registered nurses, is a community based capstone experience in nursing leadership. Concepts of health/wellness/prevention and disease management are utilized in caring for individuals, groups, or populations in a community setting. Students will incorporate management skills including quality improvement, risk management, fiscal responsibility, health and social policy, information systems, teaching and learning principles, and will coordinate, monitor, and evaluate diverse components of aggregates. Must be taken in program sequence.

NUR 496 Issues in Clinical Practice

Credits: 1
Prerequisites: Basic or ABS nursing student
Corequisites: None
Type: SEM
Accompanies a summer clinical experience in which students provide patient care at a health-care agency in the Buffalo area. Focus of discussions is on issues that arise out of patient care and the clinical setting such as communication, clinical skills, interactions with colleagues, and documentation of care that is provided. Must be taken in program sequence.

NUR 497 Nursing Honors Research

Credits: 3
Prerequisites: NUR348
Corequisites: None
Type: TUT
Students accepted into the School of Nursing Honors Research program must complete this course twice, during both semesters of the senior year. It will provide an opportunity for outstanding undergraduate nursing students to enrich their education and gain personal recognition through participation in the scholarly work of a research faculty member. In concert with a faculty member, the student will conduct a research project that culminates into a senior thesis of publication quality.

NUR 499 Independent Study

Credits: 1
Prerequisites: permission of instructor
Corequisites: None
Type: LEC
Supplements regular offerings of the department. Students must secure the instructor's permission before registering for an independent study.

Nutrition

NTR 108 Human Nutrition

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Explores basic concepts integral to the science of nutrition. Emphasizes metabolic and physiologic principles underlying digestion and absorption of nutrients, chemical structure and metabolic fate of nutrients, the biochemical role of nutrients in maintaining health, and the effects of over- and under-nutrition on disease pathogenesis.

NTR 109 Nutrition in Practice

Credits: 3
Prerequisites: NTR 108
Corequisites: NTR 110
Type: LEC
Builds upon the principles of nutrition learned in NTR 108. Assumes a mastery of the concepts of nutrition as they relate to chemistry, metabolism, and physiology-presented in NTR 108. Emphasizes individual, clinical, social, and applied aspects of nutrition, including food labeling, diet analysis, pseudo-vitamins, and food allergies. Covers additional aspects of health and nutrition such as hypertension, osteoporosis, and inborn errors of metabolism.

NTR 110 Nutrition in Practice Lab

Credits: 1
Prerequisites: NTR 108
Corequisites: NTR 109
Type: LAB
Lab course for NTR 109. Dietary analysis with personal changes are conducted and monitored along with analysis and differentiation of food components. Includes observing and analyzing the food system (farm, processing, and delivery) through field trips and group reports.

NTR 301 Dietary Assessment

Credits: 1
Prerequisites: NTR 108
Corequisites: None
Type: LAB
Prepares students to assess dietary intake of individuals, groups, and populations and how it relates to physical activity. Also prepares students to interpret data arising from dietary assessment.
NTR 401 Nutrition and Health
Credits: 3
Prerequisites: one course in biology, chemistry, or physiology, or permission of instructor
Corequisites: None
Type: LEC
Discusses nutrition as an important element for maintaining optimal health. Emphasizes the importance of each nutrient based on its biochemical and physiological functions. Also covers nutritional needs at specific stages in the life cycle, and the implication of nutrition in major health problems in the United States, such as obesity, cardiovascular disease, hypertension, and cancer. Students learn to determine nutritional status through dietary analysis and to evaluate nutritional information.

NTR 402 Nutrition in the Life Cycle
Credits: 3
Prerequisites: NTR 108
Corequisites: None
Type: LEC
Explores the role of diet and nutrition in growth, development, maturation, and aging throughout the state of life, from preconception through late adulthood.

NTR 499 Independent Study
Credits: 1
Prerequisites: permission of instructor
Corequisites: None
Type: TUT
Offers the student a unique educational experience not covered by existing formal courses. This may include library research, laboratory projects, learning new techniques, or participating in ongoing projects.

Occupational Therapy

OT 230 Therapeutic Interaction
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines therapeutic approaches used by occupational therapists in working with patients and their families. Also explores interactions among work, play/leisure, and self-care.

OT 301 Orientation to Occupational Therapy
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Provides an overview of philosophy, theory, and occupational therapy practice.

OT 314 Pediatric Dysfunction and Occupation
Credits: 2
Prerequisites: None
Corequisites: None
Type: LEC
Introduces language used by health-care professionals whose medical decisions affect and determine the course of the rehabilitation and therapeutic process.

OT 317 Medical Terminology
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Introduces language used by health-care professionals whose medical decisions affect and determine the course of the rehabilitation and therapeutic process.

OT 322 Rehabilitation Medicine II
Credits: 2
Prerequisites: None
Corequisites: None
Type: LEC
Examines various orthopedic conditions, their clinical management, and their impact on occupational performance.

OT 341 Critical Analysis of Scientific Literature
Credits: 2
Prerequisites: None
Corequisites: None
Type: LEC/DIS
Enables students to access, interpret and analyze research articles and oral presentations, and apply the findings to clinical practice, rehabilitation and/or exercise training.

OT 342 Neuroscience I
Credits: 3
Prerequisites: ANA 407
Corequisites: OT 344
Type: LEC
Explores the fundamental neurophysiology and clinical neuroanatomy of sensory systems.

OT 343 Neuroscience II
Credits: 3
Prerequisites: ANA 407
Corequisites: OT 345
Type: LEC
A continuation of OT 342, focusing on clinical neuroanatomy of motor systems and integration of sensory, motor, and cognitive functions.

OT 344 Neuroanatomy I
Credits: 1
Prerequisites: ANA 407
Corequisites: None
Type: LAB
Exposes students to the anatomical structures associated with neurophysiological concepts discussed in OT 342 and OT 343.

OT 345 Neuroanatomy II
Credits: 1
Prerequisites: ANA 407
Corequisites: None
Type: LAB
Exposes students to the anatomical structures associated with neurophysiological concepts discussed in OT 342 and OT 343.

OT 346 Introduction to Scientific Writing for Health and Rehabilitation Professionals
Credits: 1
Prerequisites: None
Corequisites: ES/OT 341
Type: LEC
Introduces BS/MS OT students to the process of writing a literature review. Accompanies ES/OT 341, Critical Analysis to Scientific Literature. Completion of this course will enable students to use a written format to communicate their analyses of research articles and begin to develop research questions. Course is designed for OT students, but is open to any student taking or who has taken ES/OT 341.

OT 351 OT Practice Skills I
Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Explores the use of various media and activity analysis as therapeutic resources for occupational therapists. Provides students with principles and procedures necessary to restore occupational roles and daily living skills with persons experiencing dysfunction.

OT 352 OT Practice Skills II
Credits: 3
Prerequisites: None
Corequisites: None
Type: LAB
Focuses on assistive technology and environmental adaptations to meet individual occupational performance needs.

OT 353 OT Practice Skills III
Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Addresses activities related to adult roles, including occupation-based activity, wheelchair evaluations, driver evaluations, environmental assessment and adaptation, aquatic therapy, physical agent modalities, and community access.

OT 361 Functional Anatomy
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC/LAB
Examines kinesiology, biomechanics, and ergonomics for occupational therapy students.

OT 371 Human Development I
Credits: 3
Prerequisites: None
Corequisites: None
Type: LAB
Considers human development from the prenatal period of life through adolescence. Also examines factors affecting growth and development during this time span and their significance in evaluation and treatment.

OT 372 Human Development II
Credits: 2
Prerequisites: None
Corequisites: None
Type: LAB
Explores human development from young adult to aged. Also considers factors affecting growth and development during this time span and their significance in evaluation and treatment.

OT 381 Theory of Occupational Therapy With Lab
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC/LAB
Presents the philosophy and theory of occupational therapy. Also examines the theory of occupational behavior, which provides a broad perspective for practice. The lab provides experience with occupational assessment.
OT 382 Issues in Occupational Therapy Service Delivery
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

OT 401 Rehabilitation Medicine I
Examines basic concepts underlying the treatment of neuromuscular dysfunction. Includes one week of full-time Level I fieldwork, as well as a lab.

OT 402 Psychosocial Practice I
Credits: 4
Prerequisites: OT 351, OT 371, OT 372, OT 381, OT 382
Corequisites: OT 402
Type: LEC/LAB
Reviews the medical management of psychiatric disorders and occupational therapy intervention strategies in treating the mentally ill, and introduces group process theory.

OT 403 Psychosocial Practice II
Credits: 3
Prerequisites: OT 351, OT 371, OT 372, OT 381, OT 382
Corequisites: OT 402
Type: LEC/LAB
Incorporates an in-depth study of practice issues in mental health with a group process lab. Includes one-week, full time Level I fieldwork.

OT 405 Physical Disabilities Practice
Credits: 4
Prerequisites: OT 342, OT 343
Corequisites: None
Type: LEC/LAB
Applies occupational theory and techniques in the treatment of persons with a physical disability. Includes one week full-time Level I fieldwork.

OT 410 Applied Neurophysiology
Credits: 4
Prerequisites: OT 342, OT 343
Corequisites: None
Type: LEC/LAB
Concentrates on the basic concepts underlying neurophysiological control of motor behavior, and applies these concepts in the treatment of neuromuscular dysfunction.

OT 412 Rehabilitation Medicine I
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines various orthopedic conditions, their clinical management, and their impact on occupational performance.

OT 440 Applied Treatment in Pediatrics
Credits: 4
Prerequisites: OT 314, OT 371
Corequisites: None
Type: LEC/LAB
Examines the knowledge and skills required for manufacturing splints and orthotic devices, and for fitting and operating orthoses and prostheses.

OT 450 Prosthetics and Orthotics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC/LAB
Examines techniques used by occupational therapists in pediatrics. Includes one week of full-time Level I fieldwork, as well as a lab.

PHC 250 Apothecarial Adventures
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC

PHC 251 Physical Disabilities
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC

PHC 302 Physical Therapy Service Delivery
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC

PHC 303 Issues in Occupational Therapy Practice
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC

PHC 312 Physical Pharmacy
Credits: 3
Prerequisites: PHC 311
Corequisites: None
Type: LEC

PHC 313 Physical Pharmacy Seminar
Credits: 1
Prerequisites: None
Corequisites: None
Type: SEM

PHC 314 Physical Pharmacy Seminar
Credits: 1
Prerequisites: None
Corequisites: None
Type: SEM

PHC 315 Physical Pharmacy Seminar
Credits: 1
Prerequisites: None
Corequisites: None
Type: SEM

PHC 316 Physical Pharmacy Seminar
Credits: 1
Prerequisites: None
Corequisites: None
Type: SEM

PHC 317 Physical Pharmacy Seminar
Credits: 1
Prerequisites: None
Corequisites: None
Type: SEM

PHC 318 Physical Pharmacy Seminar
Credits: 1
Prerequisites: None
Corequisites: None
Type: SEM

PHC 319 Physical Pharmacy Seminar
Credits: 1
Prerequisites: None
Corequisites: None
Type: SEM

PHC 320 Physical Pharmacy Seminar
Credits: 1
Prerequisites: None
Corequisites: None
Type: SEM

PHC 321 Physical Pharmacy Seminar
Credits: 1
Prerequisites: None
Corequisites: None
Type: SEM

PHC 322 Physical Pharmacy Seminar
Credits: 1
Prerequisites: None
Corequisites: None
Type: SEM

PHC 323 Physical Pharmacy Seminar
Credits: 1
Prerequisites: None
Corequisites: None
Type: SEM

PHC 324 Physical Pharmacy Seminar
Credits: 1
Prerequisites: None
Corequisites: None
Type: SEM

PHC 325 Physical Pharmacy Seminar
Credits: 1
Prerequisites: None
Corequisites: None
Type: SEM

PHC 326 Physical Pharmacy Seminar
Credits: 1
Prerequisites: None
Corequisites: None
Type: SEM

PHC 327 Physical Pharmacy Seminar
Credits: 1
Prerequisites: None
Corequisites: None
Type: SEM

PHC 328 Physical Pharmacy Seminar
Credits: 1
Prerequisites: None
Corequisites: None
Type: SEM

PHC 329 Physical Pharmacy Seminar
Credits: 1
Prerequisites: None
Corequisites: None
Type: SEM

PHC 330 Physical Pharmacy Seminar
Credits: 1
Prerequisites: None
Corequisites: None
Type: SEM

PHC 331 Case Studies in Pharmaceutical Sciences
Credits: 3
Prerequisites: PHC 311
Corequisites: None
Type: LEC

PHC 332 Introduction to Research
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC

PHC 402 Biopharmaceutics I
Credits: 4
Prerequisites: PHC 31
Corequisites: None
Type: LEC
Examines factors influencing the absorption, distribution, excretion, and metabolism of drugs in humans; also studies the roles these processes play in therapeutic and adverse effects of drug products.

PHC 403 Biopharmaceutics II
Credits: 3
Prerequisites: PHC 31
Corequisites: None
Type: LEC
Continuation of PHC 411. Presents examples of the rationale for therapeutic monitoring.

PHC 412 Introduction to Pharmacokinetics and Biopharmaceutics I
Credits: 4
Prerequisites: PHC 312
Corequisites: None
Type: LEC
Examines factors influencing the absorption, distribution, excretion, and metabolism of drugs in humans; also studies the roles these processes play in therapeutic and adverse effects of drug products.

PHC 413 Pharmaceutics Seminar
Credits: 1
Prerequisites: None
Corequisites: None
Type: SEM
Students, faculty, and visiting scientists discuss the latest developments in pharmaceutical research.

PHC 414 Pharmaceutics Seminar
Credits: 1
Prerequisites: None
Corequisites: None
Type: SEM
Students, faculty, and visiting scientists discuss the latest developments in pharmaceutical research.

PHC 420 Pharmaceutical Analysis
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Reviews modern methods used in analyzing drugs and drug products, focusing on HPLC.

PHC 421 Pharmaceutical Principles
Credits: 3
Prerequisites: permission of instructor
Corequisites: PHC 312
Type: LEC/LAB
Examines drug degradation kinetics, drug dosage formulation, solid drug dosage form dissolution kinetics, and pharmacokinetics.
PHC 425 Pharmaceutical Biotechnology: From Bench to Bedside

Credits: 2
Prerequisites: BCH 403 or BIO 205
Corequisites: None
Type: LEC
Overview of recombinant DNA techniques relevant to pharmaceutical biotechnology. Covers pharmaceutical chemistry, basic pharmaceutical sciences, pharmacokinetics, pharmacology, and pharmacotherapeutics of selected biopharmaceuticals.

PHC 426 Pharmaceutical Biotechnology Virtual Laboratory

Credits: 1
Prerequisites: None
Corequisites: None
Type: DIS
A discussion-based course that incorporates a virtual, interactive software program to illustrate the biopharmaceutical drug discovery, research, and development process.

PHC 431 Important Advances in Pharmaceutical Sciences

Credits: 2
Prerequisites: None
Corequisites: None
Type: LEC
Examines classical and contemporary advances in the drug-development process, including drug analysis, drug delivery, biopharmaceutics, pharmacokinetics, and pharmacodynamics.

PHC 432 Methods of Scientific Communication

Credits: 1
Prerequisites: PHC 498 or permission of instructor
Corequisites: None
Type: DIS
Students learn how to communicate their research project results using the scientific poster and paper as a communication tool.

PHC 497 Departmental Honors Thesis or Project

Credits: 1
Prerequisites: None
Corequisites: None
Type: TUT
Department honors or thesis project.

PHC 498 Undergraduate Research and Creative Activity

Credits: 1
Prerequisites: Permission of Instructor
Corequisites: None
Type: LAB/TUT
Involves lab and/or literature research participation on current problems.

PHC 499 Independent Study

Credits: 1
Prerequisites: permission of instructor
Corequisites: None
Type: TUT
Involves development and assessment, through literature review and discussions, of a topic of student interest.

PMY 302 Introduction to Pharmacology

Credits: 4
Prerequisites: PGY 300 or PGY 451
Corequisites: None
Type: LEC
Introductory survey of the major drug groups commonly used in therapeutics. Presents the scientific bases of drug action and the utilization of their properties in the diagnosis and treatment of disease. Content and instruction is largely directed toward students in biomedical and life sciences programs (e.g., nursing and exercise science). Prerequisites include a strong background in basic sciences (chemistry and biology) and physiology (PGY 300 or equivalent).

PMY 405 Principles of Pharmacology

Credits: 4
Prerequisites: BCH 403, PGY 451, PGY 452
Corequisites: None
Type: LEC
Explores principles of drug action on biological systems, action mechanism of each agent class on specific organ systems, a review and extension of pertinent physiologic concepts of that system, chemical structure-drug activity relationships, sites of action, metabolic patterns of principal drugs, and therapeutic and toxicologic aspects. Dual-listed with PMY 511.

PMY 406 Principles of Pharmacology

Credits: 4
Prerequisites: PMY 405
Corequisites: None
Type: LEC
Explores principles of drug action on biological systems, action mechanism of each agent class on specific organ systems, a review and extension of pertinent physiologic concepts of that system, chemical structure-drug activity relationships, sites of action, metabolic patterns of principal drugs, and therapeutic and toxicologic aspects. Dual-listed with PMY 512.

PMY 409 Experimental Pharmacology

Credits: 3
Prerequisites: PMY 405
Corequisites: PMY 406
Type: LEC/REC
Covers fundamental pharmacologic, biomedical and molecular techniques; complements instruction in PMY 405 and 406. Priority goes to PMY majors.

PMY 455 Toxicology Fundamentals

Credits: 2
Prerequisites: PGY 451, BCH 403
Corequisites: None
Type: TUT
Designed to introduce students to the basic principles and practice of toxicology. Chemical mutagenesis and carcinogenesis will also be included, with an emphasis on understanding mechanisms for these responses. An overview of risk assessment will include quantitative aspects of cancer and non-cancer based risk assessments. The adverse effects of several classes of chemicals will be investigated at specific target organs. An emphasis will also be placed on understanding the mechanism(s) for the adverse responses of specific agents at a given target site.

PMY 498 Undergraduate Research Participation in Pharmacology and Toxicology

Credits: 1
Prerequisites: None
Corequisites: None
Type: LAB/TUT
Direct involvement in original research involving a literature search and laboratory work.

PMY 499 Independent Study

Credits: 1
Prerequisites: None
Corequisites: None
Type: TUT
Involves a literature search and library work on a current topic in pharmacology or toxicology. Includes interdisciplinary projects, such as analyses of trends in drug use, toxicological projects, and applied clinical aspects.
Pharmacy

PHM 201 Orientation to Pharmaceutical Fields

Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Presents an overview of career opportunities in various pharmacy fields as well as in the pharmaceutical sciences. Also discusses requirements for admission into the professional program in pharmacy.

Pharmacy Fields

PHI 101 Introduction to Philosophy

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines general topics in various areas of philosophy showing different sides of issues; develops critical thought and philosophical method.

PHI 107 Ethics

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces value theory, good and bad, justification of obligations to others, relationship of free choice and determinism, and contemporary moral problems analyzed by ethical principles.

PHI 108 Knowledge and Reality

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces epistemology, metaphysics, knowledge as a reflection of the real world's properties and its relation to different viewpoints, the world as material objects, the mind and matter, and the role of scientific and technical knowledge in today's world.

PHI 110 Philosophy of Human Nature

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces philosophical views of being human and consequences of these for thought, action, and emotion.

PHI 115 Critical Thinking

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines techniques of problem solving, decision making, and evaluating pros and cons of an issue; organizing data; forming strategies and giving reasons; perceptual, cultural, emotional, intellectual, and expressive blocks to thinking; and simple inductive reasoning and statistical fallacies.

PHI 117 Professional Ethics

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces ethical issues encountered in such professions as medicine, engineering, public service, the media, business, social work, accounting, law, and manufacturing with an environmental impact, as well as the central concepts of professionalism.

PHI 129 Special Topics

Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Provides for the study of various philosophical topics not covered in other 100-level courses.

PHI 138 Topics in Ethics

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies selected issues of obligations and values: what are the bases of judgments of right, wrong, good and bad, and what are the applications of these?

PHI 154 Asian Wisdom

Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Explores spirit, thought, and action of Asians culled from the contemporary relevance of classical readings. Texts include Hinduism, Buddhism, Confucianism, Taoism, and Zen.

PHI 162 Law, Morality, Authority

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines current ethical positions and their applications to problems in business.

PHI 210 Introduction to Deductive Logic

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Covers definitions, formal and informal errors of reasoning, and principles of deductive reasoning; also examines the Aristotelian tradition.

PHI 211 Introduction to the Philosophy of Science

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Explores the philosophy and methodology of science, scientific experimentation, the problem of induction, nature of scientific explanation, basis of probability, and fundamental characteristics of scientific theories.

PHI 212 Introduction to Philosophy of Religion

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces issues and questions in religion; including existence of a deity, religion and science, and functions of religion in personal life.

PHI 213 World Religions

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Surveys major religions, including Christianity, Judaism, Islam, Hinduism, Buddhism.

PHI 214 Topics in Aesthetics

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines selected philosophical views from China, Japan, India, or Southeast Asia; views may include classical or contemporary Hinduism, Buddhism, Confucianism, or Taoism.
PHI 256 Topics in History of Philosophy
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies a selected position, tradition or issue in the history of philosophy.

PHI 298 Special Topics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Provides for the study of various philosophical topics not covered in other 200-level courses.

PHI 314 Philosophy of Religion
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Analyzes selected concepts in religious thought.

PHI 315 Symbolic Logic
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces the formal techniques of deductive reasoning.

PHI 320 Philosophy of Mind
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduction to the philosophy of mind, emphasizing contemporary discussion of the relationship between mind and the material world. Considers a number of different positions concerning this relationship and assesses the relative merit of each. Addresses questions such as: Are minds non-material entities, or is having a mind simply a matter of being a material entity with a certain type of complex organization? If having a mind is simply a matter of being a material entity of this sort, why do events such as pains and experiences of colors seem so different in kind from other material events?

PHI 321 Philosophy of Natural Sciences
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines the nature of theories within the physical sciences and the family of philosophical issues that surround their characterization; also explores causation, explanation, and induction.

PHI 322 Philosophy of Social Sciences
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Considers theories within the social sciences and the issues of how, if at all, they are fundamentally different from the theories of physical sciences.

PHI 329 Metaphysics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Explores theories of reality; freedom and determinism; and the reality of the self, the mind, and the body.

PHI 333 Epistemology
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Considers epistemology: The nature, sources, kind, scope, and certainty and validity of knowledge.

PHI 334 Environmental Ethics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examination of how humans should interact with the environment, both as individuals and as members of groups or organizations.

PHI 335 Contemporary Ethical Theory
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines attempts in moral philosophy to find a justification for the basic ethical principles; also considers conception of an ethics based on natural law.

PHI 336 History of Ethics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies the history of ethics from ancient times through the Enlightenment. Also covers ancient Hebrew, Greek, medieval, and modern moral theories.

PHI 337 Social and Ethical Values in Medicine
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines current ethical positions and their application to ethical and social questions in medicine.

PHI 338 Law and Morality
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines the moral status of legality and the legal status of morality, the status of unjust laws, and the role of moral judgments of lawmakers. Is a good law one that does good?

PHI 340 Law and Responsibility
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines the legal notion of liability for actions, events, or states of affairs. On what basis does the law assign blame? Does this notion of blame accord with our moral or scientific notions of responsibility?

PHI 341 Social Philosophy
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines social issues in vivid forms. Nausea, which presents philosophical questions in medicine.

PHI 342 Political Philosophy
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Critically considers a selected philosophical issue.

PHI 344 Aesthetic Theory and Criticism
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Surveys theories of art and their evaluation of works of art.

PHI 345 Aesthetics and Philosophy of Art
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Surveys historically or systematically various concepts of beauty and art.

PHI 347 Gender and Philosophy
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
To what degree are the fundamental concepts that lead philosophical investigation warped by gender prejudice, and perhaps also by other cultural blinders such as those related to race or nationality? This course introduces students to critical examination of philosophical concepts where gender assumptions arguably skew theories, such as the definition of “human” as “rational animal”, the split between emotion and reason, the distinction between mind and body, the location of ethics in ideals of public justice, and ideas about what constitutes gender, sex, and the values associated with “masculinity” and “femininity.” Both historical and contemporary texts will be studied.

PHI 348 Ethics and Social Justice
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines selected views, traditions or issues in Chinese, Japanese, Indian or Southeast Asian philosophies.

PHI 350 Early Modern Philosophy
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines early development of American philosophical thought; considers leading movements and thinkers, such as idealism, pragmatism (Peirce, James, Dewey), and realism.

PHI 351 Later Modern Philosophy
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines the development of modern philosophy from Descartes to Kant.

PHI 352 Eastern Philosophy
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines selected views, traditions or issues in Chinese, Japanese, Indian or Southeast Asian philosophies.

PHI 356 Special Topics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines selected views, traditions or issues in Chinese, Japanese, Indian or Southeast Asian philosophies.

PHI 360 Ancient Philosophy
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studied the history of Greek philosophy from Pre-Socratic philosophers to the Hellenistics.

PHI 366 Medieval Philosophy
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studied the history of philosophy from Plotinus to the end of the Middle Ages.
PHI 370 Early Modern Philosophy
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Reviews the history of metaphysics and epistemology from the Renaissance to Kant.

PHI 380 Nineteenth-Century Philosophy, Kant to Nietzsche
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Considers philosophy from Kant to the twentieth century; including idealism, post-Hegelian philosophies, positivism, utilitarianism, evolutionism, and intellectual movements at the close of the nineteenth century.

PHI 388 Twentieth-Century Philosophy
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines representative movements and issues in present-day philosophy in Europe and America.

PHI 389 Contemporary Latin American Thought
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Surveys principal positions and traditions in contemporary philosophy in Latin America.

PHI 398 Special Topics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Provides for the study of various philosophical topics not covered in other 300-level courses.

PHI 412 Philosophy of Religion
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Performs advanced critical analysis of selected issues in religious belief.

PHI 415 Logical Theory I
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Reviews modern studies in propositional logic, formal techniques that can be used to analyze inferences, and philosophical topics and problems related to propositional logic. Some acquaintance with logic desirable.

PHI 416 Logical Theory II
Credits: 3
Prerequisites: PHI 315
Corequisites: None
Type: LEC
Continuation of PHI 415. Considers predicate logic, generalization, and related philosophical issues.

PHI 417 Modal Logic
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies logical systems designed to express concepts of necessity and possibility. Develops semantic accounts employing systems of possible worlds. Examines philosophical topics and problems related to necessity and possibility.

PHI 418 Philosophy of Mathematics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Explores philosophical topics and problems of mathematics and its logical foundations.

PHI 419 Philosophy of Logic
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Reviews philosophical topics and issues of logic, both historical and contemporary.

PHI 420 Topics in Philosophy of Science
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Involves detailed consideration of selected issues in philosophy of the natural or social sciences.

PHI 421 Topics in Legal Philosophy
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Considers philosophical issues in law, including theories of law, evidence, argument, punishment, and penalties.

PHI 422 Topics in Aesthetics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines selected views, traditions or issues in Chinese, Japanese, Indian, or Southeast Asian philosophies.

PHI 423 Topics in Ethical Theory
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies philosophical topics and issues related to ethics.

PHI 424 Topics in Political Theory
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines selected views, traditions or issues in political philosophy.

PHI 425 Topics in Metaphysics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines metaphysical topics and issues.

PHI 426 Topics in Social Theory
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines social theory.

PHI 427 Topics in Philosophy of Religion
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines selected views, traditions or issues in philosophy of religion.

PHI 428 Topics in Philosophy of Art
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines selected views, traditions or issues in philosophy of art.

PHI 429 Topics in Philosophy of Mind
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines selected views, traditions or issues in philosophy of mind.

PHI 430 Topics in Philosophy of Language
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines selected views, traditions or issues in philosophy of language.

PHI 431 Topics in Philosophy of Science
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines selected views, traditions or issues in philosophy of science.

PHI 432 Topics in Ethics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines selected views, traditions or issues in ethics.

PHI 433 Topics in Political Theory
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines selected views, traditions or issues in political theory.

PHI 434 Topics in Metaphysics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines selected views, traditions or issues in metaphysics.

PHI 435 Topics in Social Theory
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines selected views, traditions or issues in social theory.

PHI 436 Topics in Philosophy of Religion
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines selected views, traditions or issues in philosophy of religion.

PHI 437 Topics in Philosophy of Art
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines selected views, traditions or issues in philosophy of art.

PHI 438 Topics in Philosophy of Science
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines selected views, traditions or issues in philosophy of science.

PHI 439 Topics in Ethics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines selected views, traditions or issues in ethics.

PHI 440 Topics in Political Theory
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines selected views, traditions or issues in political theory.

PHI 441 Topics in Metaphysics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines selected views, traditions or issues in metaphysics.

PHI 442 Topics in Social Theory
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines selected views, traditions or issues in social theory.

PHI 443 Topics in Legal Philosophy
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Considers philosophical issues in law, including theories of law, evidence, argument, punishment, and penalties.

PHI 444 Aesthetics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines in-depth selected theories of art.

PHI 445 Chinese Philosophy
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines selected views, traditions or issues in Chinese philosophy.

PHI 446 Plato
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Involves detailed consideration of central issues in Plato's philosophy.

PHI 447 Aristotle
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Involves detailed consideration of central issues in Aristotle's philosophy.

PHI 448 Ancient Philosophy
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Considers selected issues in ancient philosophy, including comparison of major positions.

PHI 449 Medieval and Renaissance Philosophy
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines selected traditions or issues in philosophy from 500 to 1600 AD.
Physics

PHY 100 Introduction to Physics

Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Preparation for PHY 107-PHY 108 or PHY 101-PHY 102. Covers mostly Newtonian mechanics, emphasizing problem solving and math skills useful for physics. Reviews algebra, geometry, and trigonometry as applied to physics.

PHY 101 College Physics

Credits: 4
Prerequisites: None
Corequisites: PHY 151
Type: LEC/REC
Presents non-calculus, introductory physics, including mechanics, heat, waves, and sound.

PHY 102 College Physics II

Credits: 4
Prerequisites: PHY 101
Corequisites: PHY 152
Type: LEC/REC
Presents non-calculus, introductory physics, including electricity and magnetism, light, optics, and modern physics.

PHY 107 General Physics I

Credits: 4
Prerequisites: None
Corequisites: MTH 141
Type: LEC/REC
A calculus-based introductory course primarily for chemistry, engineering, and physics majors. Covers kinematics, Newton's laws, energy, momentum, rotational motion, and oscillations.

PHY 108 General Physics II

Credits: 4
Prerequisites: PHY 107
Corequisites: MTH 142, PHY 158
Type: LEC/REC
A calculus-based introductory course primarily for chemistry, engineering, and physics majors. Covers the electric field, Gauss' law, electric potential, capacitance, DC circuits, RC circuits, magnetic field, Faraday's law, inductance, LR circuits, AC circuits, and Maxwell's equations.

PHY 116 Philosophy of Physics

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies views of space, time, and matter in the ancient world; European post-renaissance, nineteenth-century ideas and discoveries; wave-particle dualism; wave mechanics; Copenhagen school; theory of relativity; and problems of matter, radiation, and cosmology.

PHY 117 Honors Physics I

Credits: 4
Prerequisites: None
Corequisites: MTH 141
Type: LEC/REC
Covers the same topics as PHY 107, but in greater depth. Class size is limited. In general, taken by students in the University Honors College, but other students may take it with permission of instructor.

PHY 118 Honors Physics II

Credits: 4
Prerequisites: PHY 107 or PHY 117
Corequisites: MTH 142, PHY 158
Type: LEC/REC
Covers the same topics as PHY 108, but in greater depth. Class size is limited. In general, taken by students in the University Honors College, but other students may take it with permission of instructor.

PHY 119 How Things Work

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Describes working principles of devices used in everyday life, such as the video recorder, fax machine, and television. Reviews the history of discoveries that made each device possible, as well as development of the device. Explores the consequences of particular devices in society. Suitable for non-science majors, but science and engineering majors are expected to greatly benefit from it also.

PHY 121 Descriptive Astronomy I

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC/LAB
Introduces astronomy, astronomical instrumentation, the birth and evolution of stars, black holes, constellations and the night sky, covering scales in the universe, the history of astronomy from ancient times to the present, neutron stars, spectroscopy, and white dwarfs.

PHY 122 Descriptive Astronomy II

Credits: 3
Prerequisites: PHY 121
Corequisites: None
Type: LEC/LAB
A continuation of PHY 121. Covers the Milky Way galaxy, the galaxies in the universe, cosmology and the origin of the universe, the formation of the solar system, earthlike planets, planets of the outer solar system, meteorites, asteroids, and comets. Course themes concentrate on origins: How did the universe begin? What was the origin of the earth? How did life begin?

PHY 151 College Physics I Lab

Credits: 1
Prerequisites: None
Corequisites: PHY 101
Type: LAB
Studies heat, mechanics, sound, and waves.

PHY 152 College Physics II Lab

Credits: 1
Prerequisites: None
Corequisites: PHY 102
Type: LAB
Studies electricity and magnetism, light, optics, and modern physics.

PHY 158 General Physics II Lab

Credits: 1
Prerequisites: PHY 107
Corequisites: PHY 108
Type: LAB
Conducts experiments on mechanics, as well as electricity and magnetism.

PHY 207 General Physics III

Credits: 4
Prerequisites: PHY 107-PHY 108
Corequisites: None
Type: LEC
Introduces sound waves, electromagnetic waves, and geometrical and physical optics. Introduces modern physics, including discovery of the electron, the photon, wave-particle duality, the Bohr model of H-atom, the Schrödinger equation, quantum numbers, the Pauli principle and periodic table, and lasers.

PHY 208 General Physics IV

Credits: 3
Prerequisites: PHY 107, PHY 108
Corequisites: MTH 306
Type: LEC
Examines sound waves, electromagnetic waves, and geometrical and physical optics. Introduces modern physics, including discovery of the electron, the photon, wave-particle duality, the Bohr model of H-atom, the Schrödinger equation, quantum numbers, the Pauli principle and periodic table, and lasers.

PHY 217 Honors Physics III

Credits: 3
Prerequisites: PHY 107 and PHY 108, or PHY 117 and PHY 118
Corequisites: MTH 241
Type: LEC
Covers the same topics as PHY 207, but in greater depth. Class size is limited. In general, taken by students in the University Honors College, but other students may take it with permission of instructor.

PHY 257 General Physics III Lab

Credits: 1
Prerequisites: PHY 107 and PHY 108/PHY 158, or PHY 117 and PHY 118/PHY 158
Corequisites: PHY 207
Type: LAB
Conducts experiments on waves, geometrical and physical optics, and modern physics.

PHY 286 Maple in Physics

Credits: 1
Prerequisites: PHY 107-PHY 108
Corequisites: None
Type: LAB
Introduces basic syntax and capabilities of this computer calculus/algebra system as applied to obtain analytical solutions to problems in physics. Students taking PHY 386 learn the same syntax as PHY 286 students, but are required to do more advanced problems such as occur in junior-senior physics courses. A student may receive academic credit for only one of the two courses.

PHY 301 Intermediate Mechanics I

Credits: 3
Prerequisites: PHY 107 and MTH 306
Corequisites: None
Type: LEC
Vectors, Newtonian mechanics: rectilinear motion of a particle, general motion of a particle in three dimensions, oscillations, Hamilton's variational principle: derivation of Lagrange's equations and Hamilton's equations with simple applications, equivalence to Newtonian dynamics, forces of constraint and the Lagrange multiplier method, generalized forces, noninertial reference systems, gravitation and central forces.

PHY 302 Intermediate Mechanics II

Credits: 3
Prerequisites: PHY 301
Corequisites: None
Type: LEC
Whenever feasible, the Lagrangian method will be applied. Dynamics of systems of particles, mechanics of rigid bodies: planar motion, motion of rigid bodies in three dimensions, dynamics of oscillating systems.

PHY 307 Modern Physics Lab

Credits: 2
Prerequisites: PHY 207 or PHY 217; PHY 208, PHY 257
Corequisites: None
Type: LAB
Conducts experiments in thermodynamics and modern physics.

Undergraduate Course Descriptions 2008-09 - University at Buffalo
PHY 310 Intermediate Optics
Credits: 3
Prerequisites: PHY 207 or PHY 217
Corequisites: None
Type: LEC
Examines geometrical and physical optics. Explores diffraction, interference, polarization, and other wave properties of light; and the quantum nature of light and lasers.

PHY 311 Applied Acoustics of Music
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
A general, practical course. Covers the nature of sound; the ear and the hearing process; consonance and dissonance; scales and harmonic series; basic physics of musical instruments; high fidelity systems; and theatre, studio, and room acoustics.

PHY 386 Maple in Physics
Credits: 1
Prerequisites: PHY 107, PHY 108, PHY 207, PHY 208, and junior standing
Corequisites: None
Type: LAB
Introduces basic syntax and capabilities of the computer calculus/algebra system as applied to obtain analytical solutions to problems in physics. Students taking PHY 386 learn the same syntax as PHY 286 students, but are required to do more advanced problems such as occur in junior-senior physics courses. A student may receive academic credit for only one of the two courses.

PHY 401 Modern Physics I
Credits: 3
Prerequisites: MTH 306, PHY 207, PHY 208
Corequisites: None
Type: LEC
Introduces basic syntax and capabilities of the computer calculus/algebra system as applied to obtain analytical solutions to problems in physics. Students taking PHY 386 learn the same syntax as PHY 286 students, but are required to do more advanced problems such as occur in junior-senior physics courses. A student may receive academic credit for only one of the two courses.

PHY 402 Modern Physics II
Credits: 3
Prerequisites: PHY 401
Corequisites: None
Type: LEC
Angular momentum, three-dimensional problems, hydrogen atom, time-independent perturbation theory, electron spin and fine structure, time-dependent perturbation theory, quantum statistics.

PHY 403 Electricity and Magnetism I
Credits: 3
Prerequisites: MTH 241, MTH 306, PHY 108
Corequisites: None
Type: LEC
Examines vector calculus, Gauss’ law, scalar and vector potentials, Laplace and Poisson’s equations, dielectrics, electrostatic and magnetostatic fields, Ampère’s law, Faraday’s law, and Maxwell’s equations.

PHY 404 Electricity and Magnetism II
Credits: 3
Prerequisites: PHY 403
Corequisites: None
Type: LEC
Undertakes further study of Maxwell’s equations, electric and magnetic susceptibilities, electromagnetic radiation, electromagnetic fields from a moving charge, waveguides and transmission lines, Poynting’s vector, and Lorentz force. Also examines relativistic invariance.

PHY 405 Thermal and Statistical Physics I
Credits: 3
Prerequisites: MTH 306, PHY 208, PHY 301
Corequisites: None
Type: LEC
Examines vector calculus, Gauss’ law, scalar and vector potentials, Laplace and Poisson’s equations, dielectrics, electrostatic and magnetostatic fields, Ampère’s law, Faraday’s law, and Maxwell’s equations.

PHY 406 Thermal and Statistical Physics II
Credits: 3
Prerequisites: PHY 207 or PHY 217; PHY 401, PHY 405
Corequisites: None
Type: LEC
Examines vector calculus, Gauss’ law, scalar and vector potentials, Laplace and Poisson’s equations, dielectrics, electrostatic and magnetostatic fields, Ampère’s law, Faraday’s law, and Maxwell’s equations.

PHY 407 Advanced Laboratory
Credits: 3
Prerequisites: PHY 207 or PHY 217; PHY 208, PHY 257, PHY 307, PHY 401
Corequisites: None
Type: LAB
Covers modern physics, with a choice of experiments: atomic physics, modern laser optics, solid state, magnetic resonance, X-ray diffraction, scanning microscope, nuclear, or particle physics. Two four-hour labs each week.

PHY 408 Advanced Laboratory
Credits: 3
Prerequisites: PHY 207 or PHY 217; PHY 208, PHY 257, PHY 307, PHY 401
Corequisites: None
Type: LAB
Covers modern physics, with a choice of experiments: atomic physics, modern laser optics, solid state, magnetic resonance, X-ray diffraction, scanning probe microscopy, nuclear, or particle physics. Two four-hour labs each week.

PHY 410 Computational Physics I
Credits: 3
Prerequisites: PHY 207 or PHY 217; PHY 401
Corequisites: None
Type: LEC
Examines numerical solutions of problems in dynamics, electrodynamics, and quantum and statistical physics. Also examines root-finding, numerical differentiation, quadrature, matrix inversion, and ordinary differential equations. Studies structured programming in FORTRAN 90, C++, or Java; and explores Computer graphics.

PHY 411 Computational Physics II
Credits: 3
Prerequisites: PHY 410
Corequisites: None
Type: LEC
Studies structured programming in FORTRAN 90, C++, or Java; and explores Computer graphics.

PHY 412 Nuclear and Particle Physics
Credits: 3
Prerequisites: PHY 401
Corequisites: None
Type: LEC
Covers the quantum statistics of ideal Bose and Fermi systems, applications to electrons in metals, blackbody radiation, Bose condensation, neutron stars, interacting systems, lattice vibrations, nonideal gases, ferromagnets, kinetic theory of transport processes, irreversible processes, and fluctuations.

PHY 413 Electronics
Credits: 3
Prerequisites: PHY 108 or permission of instructor
Corequisites: None
Type: LEC/LAB
Introduces basic concepts of circuit design, impedance, and feedback systems; solid-state components; integrated circuits; digital circuits; and basic instrumentation.

PHY 414 Experimental Techniques
Credits: 2
Prerequisites: permission of instructor
Corequisites: None
Type: TUT
Involves individual work with faculty in a research laboratory.

PHY 415 Experimental Techniques
Credits: 2
Prerequisites: permission of instructor
Corequisites: None
Type: TUT
Involves individual work with faculty in a research laboratory.

PHY 480 Special Topics in Physics
Credits: 1
Prerequisites: None
Corequisites: None
Type: TUT
Topics of interest that are not regularly covered in other courses.

PHY 497 Honors
Credits: 1
Prerequisites: None
Corequisites: None
Type: TUT
For students who wish to do a senior thesis. Consult the undergraduate director, Professor Fuda, for details.

PHY 498 Undergraduate Research
Credits: 1
Prerequisites: None
Corequisites: None
Type: TUT
Allows students to earn credit for research activities under the direction of a physics faculty member.

PHY 499 Independent Study in Physics
Credits: 1
Prerequisites: None
Corequisites: None
Type: TUT
Involves individual study arranged between a student and a faculty member. Not restricted to students with professional goals in technical areas.
Physiology

PGY 300 Human Physiology
Credits: 4
Prerequisites: ANA 113 or BIO 200 or CHE 101
Corequisites: None
Type: LEC/REC
Functions of the human body; interrelationships of the organ systems as humans respond and adapt to their environment.

PGY 405 Cell & Membrane Physiology
Credits: 4
Prerequisites: BIO 201 and BIO 205 or BCH 403
Corequisites: None
Type: LEC/REC
Contemporary issues of cell structure and function and experimental methods used in modern cell biology research. Lectures concern basic principles and show how these principles are derived from research through reviewing original journal articles.

PGY 412 Applied Physiology
Credits: 2
Prerequisites: PGY 300 or PGY 452
Corequisites: None
Type: LEC
Physiological responses of the body to the internal stresses caused by disease.

Polish

POL 101 Elementary Polish 1st Semester
Credits: 5
Prerequisites: None
Corequisites: None
Type: LEC
Requires no previous knowledge of Polish. Develops speaking, reading, writing, and comprehension skills. Students with some familiarity with spoken Polish are welcome.

POL 102 Elementary Polish 2nd Semester
Credits: 5
Prerequisites: POL 101
Corequisites: None
Type: LEC
Requires no previous knowledge of Polish. POL 102 is a sequel to POL 101. Develops speaking, reading, writing, and comprehension skills. Students with some familiarity with spoken Polish are welcome.

POL 203 Intermediate Polish 1st Semester
Credits: 3
Prerequisites: POL 102 or permission of instructor
Corequisites: None
Type: LEC
Involves further development of all four language skills; introduces selections from Polish literary masterpieces. POL 204 is a spring sequel to POL 203.

POL 204 Intermediate Polish 2nd Semester
Credits: 3
Prerequisites: POL 203 or permission of instructor
Corequisites: None
Type: LEC
Involves further development of all four language skills; introduces selections from Polish literary masterpieces. POL 204 is a spring sequel to POL 203.

POL 210 Special Topics
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Explores a selected topic in Polish studies.

POL 211 Special Topics
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Explores a selected topic in Polish studies.

POL 222 Polish Culture: Theatre
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Explores differing topics in theatre within the area of Polish studies.

POL 223 Topics in Polish Culture
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Explores differing topics within the area of Polish studies.

POL 231 Intro to Polish Literature
Credits: 3
Prerequisites: POL 204 or permission of instructor
Corequisites: None
Type: LEC
Survey of major Polish literary works from the beginning until the 19th century.

POL 232 Intro to Polish Literature
Credits: 3
Prerequisites: POL 204 or permission of instructor
Corequisites: None
Type: LEC
Survey of major Polish literary works of the 20th and 21st centuries.

POL 305 Advanced Polish
Credits: 3
Prerequisites: POL 204 or permission of instructor
Corequisites: None
Type: LEC
Emphasizes conversation and written compositions. Readings of short stories, poetry, essays, and plays yield vigorous discussions in Polish.

POL 306 Advanced Polish
Credits: 3
Prerequisites: POL 305 or permission of instructor
Corequisites: None
Type: LEC
Emphasizes conversation and written compositions. Readings of short stories, poetry, essays, and plays yield vigorous discussions in Polish.

POL 323 Polish Literature in Translation
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Considers major figures in Polish literature from the 1930s to the present. Readings and discussions focus on Mrozek (drama), Milosz, Herbert, Rozewicz, Szymborska (poetry), Schulz, Gom- browicz, Andrzejewski, and Konwicki (fiction).

PGY 498 Independent Study
Credits: 1
Prerequisites: Permission of instructor
Corequisites: None
Type: TUT
Undergraduate research tutorial.

PGY 499 Independent Study
Credits: 1
Prerequisites: Permission of instructor
Corequisites: None
Type: TUT
Undergraduate research tutorial.
POL 324 Poland Today
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines major socioeconomic, political, and cultural happenings and developments in Poland since World War II, Solidarity, the disintegration and collapse of the Communist regime in 1989, the leap to the market economy, and political pluralism.

POL 338 Poland Central Europe
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Explores a selected topic in Polish studies.

POL 411 Explores a selected topic in Polish studies.
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Explores a selected topic in Polish studies.

POL 499 Independent Study
Credits: 1
Prerequisites: None
Corequisites: None
Type: TUT
Supplements regular offerings of the department. Students must secure permission of the instructor before registering.

POLITICAL SCIENCE

PSC 100 Enduring Issues in Political Science
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines political science; focuses on concepts that have been developed over the long tradition of research and that advance our understanding of different features of political life.

PSC 101 Introduction to American Politics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Explores the theory and practice of the American political system; the three government branches, federalism, political parties, groups in the electoral and governmental process, public policy making, and contemporary political problems.

PSC 102 Introduction to International Politics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces contemporary and historical international relations; also examines nationalism, imperialism, power diplomacy, and ideological conflict.

PSC 103 Politics Abroad
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces foreign political systems; explores significant political similarities and differences among countries.

PSC 104 Introduction to Political Philosophy
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies recurring themes in political thought, such as justice and equality, using the works of major political philosophers.

PSC 105 Democracy in America
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Explores the meaning of a political community’s self-government, constitutional limitations on political rule, citizen participation and representation, reconciliation of constitutional government with democracy and equality, and proper functions of government in relation to the economy and society.

PSC 118 Just and Unjust War
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines the ethical restraints on the use of force that have become increasingly germane during the latter part of the 20th century.

PSC 180 Election Year Politics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces national election politics in the United States. Focuses on the voters, the candidates, and the media.

PSC 200 Empirical Political Science
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines the basis for and methods of empirical political science, and studies empirical hypotheses formulation and testing. Formerly PSC 291.

PSC 211 Issues in Contemporary Politics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Current topics of political interest, such as AIDS or government regulation of the economy. Topics vary for each offering of the course.

PSC 214 Congressional Elections
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces the context, rules, actors, outcomes, and implications of elections to the United States House and Senate. Teaches students to approach and evaluate individual races or specific election years within a general framework of analysis.

PSC 215 Law and the Political Process
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Explores the role of law as a political instrument; and relations between law and morality, technology, economics, and social reform.

PSC 216 Political Leadership
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Political leadership in contemporary countries; general problems such as accession and succession, charismatic leadership, and democratic and dictatorial leadership; selected case studies of political leadership.

PSC 221 Psychology and Politics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Study of the manifestations of human nature in political life. Includes such topics as political symbolism and mass response; leadership and identification; political socialization; emotional expression; and the relationship between motive and public action.

PSC 222 Politics and Society
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces students to classic and contemporary issues and readings in political sociology, centered on the relationship of social and political forces. Draws empirical illustrations and cases from American and other “advanced industrial” societies.

PSC 223 Politics and Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Focuses on the representation of politics—in theory and practice—in contemporary literature (20th century).

PSC 224 Politics and Technology
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Acquaints students with basic knowledge on how to study the social, political, economic, and communicative phenomena occurring within and around the Internet.
PSC 225 Equality and Justice in the United States

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Examines the conflict between the American people's commitment to equality, as stated in the Declaration of Independence, and its correspondence with economic and racial realities.

PSC 226 Marxism and Politics

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Survey of recent (since 1970) developments in the Marxist theory of the state; the functions of the state in modern capitalist countries; interpretations of U.S. politics, including the role of interest groups, unions, classes, bureaucracy, parties, and governmental policies; criticisms of the Leninist mode of party organization; and strategies and prospects of political action.

PSC 227 Politics and Geography

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

This course introduces students to the interdependence of political life and its geographic context. The interrelationship of politics and geography is explored at the international, national, and local levels.

PSC 229 East Asian Political Economy

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Explores institutions that operate within and among China, Taiwan, Japan, and Korea; also considers the political, social, and economic settings in which international business is transacted in East Asia.

PSC 275 Comparing Foreign Policies

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Reviews theoretical approaches in explaining foreign policymaking, with selected case studies.

PSC 276 African American Political Systems

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Considers Black Americans' role, and the significance of race, in national politics and the overall politico-economic system.

PSC 293 Race and the Law

Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM

Examines that part of U.S. law that has dealt with the human and civil rights of African Americans (and by implication other racial ethnic groups in U.S. society: Asian Americans, Hispanic Americans, Native Americans, etc.)

PSC 294 African American Political Development

Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM

Introduces students to black political development in the Western Hemisphere, particularly emphasizing the Caribbean area and the socio-political relationships between black West Indians and other black communities in the Western Hemisphere.

PSC 301 Cases in Civil Liberties

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Examines case analyses of individual rights and liberties as defined by courts in the United States.

PSC 302 Protecting Civil Liberties

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Studies processes by which policies dealing with civil liberties are implemented. Examines federal and local public bureaucracies charged with law enforcement, the nature of legal services, litigation strategies, and reform proposals.

PSC 303 Constitutional Law

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Examines common law background of the American Constitution and the Constitution's role in American politics; selected problem areas.

PSC 304 Legislative Politics

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Studies legislative process in the United States; including organization, internal dynamics, and functioning of legislative bodies; and their relations with the executive and judicial branches and with groups in society.

PSC 305 Judicial Politics

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Examines courts in the American political system, selection of judges, flow of decisions through trial and appellate courts, consideration of judicial decision making, and relations with other government institutions.

PSC 306 The American Presidency

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Explores the presidency's role in the politics and policy process of the United States, including growth, scope, and limits of presidential power.

PSC 307 Political Parties

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Considers the relationship between political parties and politics, as well as internal dynamics and citizen identification with parties and politics.

PSC 308 Organizational Theory in Political Institutions

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Examines dynamics of the policy process in the United States, including agenda-setting, formulation, and implementation. Case studies in substantive policy areas illustrate these processes.

PSC 309 American Federalism

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Examines political relationships and policy outcomes associated with the changing nature of the federal system and intergovernmental relations over the past fifty years.

PSC 310 Public Administration

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Considers choices made in the political arena. Also examines the scientific study of politics, including the development and appropriateness of theories and models to political behavior.

PSC 311 State Politics

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Reviews significant political institutions, processes, and problems in the fifty states.

PSC 312 Urban Politics

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Describes social and historical patterns underlying the organization of power in American municipalities, and the means by which power is brought to bear upon the problems of the city.

PSC 313 Voting and Public Opinion

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Examines dynamics of the policy process in the United States, including agenda-setting, formulation, and implementation. Case studies in substantive policy areas illustrate these processes.

PSC 314 Public Policy Making

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Examines dynamics of the policy process in the United States, including agenda-setting, formulation, and implementation. Case studies in substantive policy areas illustrate these processes.

PSC 315 American Political Economy

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Considers the relationship between the political system and the economic system, including the nature of American capitalism, government regulation of the economy, the role of economic factors in the political system, and selected economic problems.

PSC 316 Politics of Political Choice

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Explores that part of U.S. law that has dealt with the human and civil rights of African Americans (and by implication other racial ethnic groups in U.S. society: Asian Americans, Hispanic Americans, Native Americans, etc.)

PSC 317 Environmental Politics

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Considers choices made in the political arena. Also examines the scientific study of politics, including the development and appropriateness of theories and models to political behavior.
PSC 319 Media in American Politics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Reviews the historical context of the mass media in American politics, legal issues surrounding freedom of speech and press, the production of news, the media's role in campaigns and elections, the media as a political institution that interacts with the three branches of government, citizen response to news coverage of politics, and the cultural impact of daily media fare.

PSC 320 Political Socialization
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines political learning, political change and political stability theories, kinds of political teaching, and adult socialization into citizen roles.

PSC 321 InternationalIntroduction to World Politics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Considers classical and contemporary approaches to understanding the contemporary international system, alliances, nuclear strategy, decision-making, and the role of the United States.

PSC 322 National Security
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Explores national security issues, including the role of the United States in world politics, the role of the United Nations, and international organizations.

PSC 324 Politics of Housing
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Development of housing policy in the U.S.; growth of federal housing programs since the National Housing Act of 1937; role played by local governments and the housing industry in making use of such programs; achievements of programs in public housing, urban renewal, model cities, and housing subsidies.

PSC 325 American Foreign Policy Problems
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Considers selected problems in American foreign policy, such as the United States' relations with Europe or the Third World, arms control and disarmament, and the United States' future world role.

PSC 326 War and International Security
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Explores nuclear weapons' impact on United States national security; considers nuclear deterrence, arms control, and United States-Soviet relations.

PSC 327 The Cold War and After
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Reassesses the cold war between the United States and the Soviet Union, from the Bolshevik revolution until the collapse of the Soviet Union.

PSC 328 Economics and Foreign Policy
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Explores American foreign economic relations; American trade, aid, and investment relations; and the American role in the international economic system.

PSC 329 US-Latin American Relations
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Intergovernmental relations in the Western Hemisphere: relations between Latin American nations and the U.S.

PSC 330 International Relations Problems
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines selected questions regarding international conflict and cooperation.

PSC 331 Foreign Policy Making
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Considers decision making in foreign policy; the role of Congress, the Presidency, the State Department, public opinion, and interest groups.

PSC 332 International Organizations
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines the United Nations, specialized agencies, and other intergovernmental organizations in peacekeeping, economic development, and social welfare; also studies regional integration.

PSC 333 International Relations Theory
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces international relations theory, including the nature of the international system, alliances, nuclear strategy, negotiation, and decision making within governments.

PSC 334 American Foreign Policy
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines American foreign policy, particularly since World War II.

PSC 335 Russian Foreign Policy
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies continuity and change in Russian foreign policy, forces motivating Russian behavior in world affairs, and selected problems of Russian foreign policy.

PSC 336 Chinese Foreign Policy
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Study of the foreign policy of the People's Republic of China. The historical background and specific issues such as China and the U.S., China and the Third World, and Sino-Soviet relations are examined.

PSC 337 Chinese Foreign Policy
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines the existing body of international law and the functions that international law performs.

PSC 338 Comparative Foreign Policy
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Reviews theoretical approaches in explaining foreign policy making, with selected case studies.

PSC 339 International Law
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines the existing body of international law and the functions that international law performs.

PSC 340 Politics in Western Europe
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Considers governmental institutions and political processes in major Western European nations.

PSC 341 Political Change
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Considers governmental institutions and political processes in major Western European nations.

PSC 342 Politics of Developing Nations
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Comparatively analyzes political institutions, processes, and behavior in developing nations.

PSC 343 International Organizations
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines international organizations, including the United Nations, specialized agencies, and other intergovernmental organizations in peacekeeping, economic development, and social welfare; also studies regional integration.

PSC 344 Political Campaigns
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Investigates the fundamental characteristics and regularities in American political campaigns and how they affect elections and, thereby, popular control of government. Focuses to a great degree on presidential election campaigns, but also examines campaigns for Congress and state offices, as well as campaigning in primary elections.

PSC 345 Canadian Politics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Explores the politics and government of America's largest trading partner and neighbor to the north. Gives primary attention to Canadian politics and institutions, but also makes some comparisons with the United States.

PSC 346 Individuals and World Politics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Surveys international politics from the individual decision maker's vantage point.

PSC 350 Politics of the U.S.S.R.
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces political processes and institutions of government in the U.S.S.R. and its successor states from 1917 to the present; also studies Marxist-Leninist ideology and czarist institutions.

PSC 351 Politics in E. Europe Post Soc. Sts.
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines only the countries of the former Warsaw Pact and not the states of the former Soviet Union.

PSC 355 Asian Politics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Explores contemporary political development in Asian countries, emphasizing Chinese and Japanese politics.
PSC 370 African Politics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines political change south of the Sahara in the post-independence period; analyzes historical, geographical, economic, and social factors of the pre-independence period. Also considers traditional social patterns, colonialism, nationalism, the military's role, Africa in world politics, and transformation in southern Africa.

PSC 371 Middle Eastern Politics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces students to the politics of the Middle East with regard to political issues currently facing the region.

PSC 372 Latin American Politics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Explores political development patterns resulting from structural aspects of Latin American societies; also studies social stratification, political and governmental structures, and patterns of dependency; considers case studies of selected Latin American countries.

PSC 373 International Futures
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces students to a range of ways by which analysts have tried to think about and study the future.

PSC 376 Money in Politics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Investigates how political campaigns have been funded and explores the impact of campaign financing on election outcomes and on the behavior of elected officials in making public policy decisions.

PSC 378 Politics of Gender
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Investigates the connections between American politics, sex, and gender. Includes discussions of the women's movement, feminist theory, the Equal Rights Amendment, women voters and candidates, and the politics of abortion.

PSC 379 Latino Politics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
An introduction to the interactions of the Latino people in the U.S. with political institutions and public policy.

PSC 380 Classical and Medieval Political Philosophy
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines major contributions to political philosophy from Plato and Aristotle to Machiavelli.

PSC 382 Machiavelli to Marx Political Philosophy
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies political philosophy from the Renaissance through the nineteenth century.

PSC 383 Twentieth-Century Political Philosophy
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies the treatment of selected major problems of political philosophy by contemporary thinkers.

PSC 384 American Political Thought I: Colonial Era to the Civil War
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Considers the origins, development, and application of American political ideas from colonial beginnings through the conflict of ideas of the Civil War.

PSC 391 Special Topics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Content varies by semester.

PSC 392 Political Analysis Lab
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduction to some basic techniques of data collection and analysis in political science; survey research; small group experiments.

PSC 393 Game Theory and Politics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces game theoretic and related models in political science, while emphasizing these models' application to international politics.

PSC 395 Empirical Theory: Democracy
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
This class focuses on key questions related to the empirical study of democratic governments, or aspects thereof.

PSC 401 Advanced Civil Liberties
Credits: 3
Prerequisites: PSC 301, PSC 302
Corequisites: None
Type: LEC
This advanced senior course, designed for students about to enter law school, addresses selected topics in civil liberties in America, such as civil rights, criminal procedure, and First Amendment rights.

PSC 406 Supreme Court Seminar
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
An advanced topic intended for juniors and seniors who have a strong interest in the field of international relations. Provides an opportunity for students to develop research and library skills by writing a paper on a subject related to the seminar's main focus.

PSC 413 Comparative Political Economy
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces comparative political economy, and the comparative politics of domestic economic policies. Topics include market reforms in developed, developing, and postsocialist countries, varieties of welfare capitalism, varieties of democratic institutions and their effects on economic policies, and more. Some background in economics is helpful.

PSC 418 The International System
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Considers the international system's evolution from the late 19th century to the present. Uses diplomatic history and contemporary international affairs as a "laboratory" for testing various theories about international politics.

PSC 419 International Crisis Seminar
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
An advanced topic intended for juniors and seniors who have a strong interest in the field of international relations. Provides an opportunity for students to develop research and library skills by writing a paper on a subject related to the seminar's main focus.

PSC 420 Comparing Political Parties
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines internal organization, functions, and impact of political parties from a comparative perspective.

PSC 421 Comparative Bureaucracies
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines internal organization, functions, and impact of political parties from a comparative perspective.

PSC 427 International Organizations
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines internal organization, functions, and impact of political parties from a comparative perspective.

PSC 428 International Organizations
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines internal organization, functions, and impact of political parties from a comparative perspective.

PSC 429 International Organizations
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines internal organization, functions, and impact of political parties from a comparative perspective.

PSC 429 International Organizations
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines internal organization, functions, and impact of political parties from a comparative perspective.

PSC 429 International Organizations
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines internal organization, functions, and impact of political parties from a comparative perspective.

PSC 429 International Organizations
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
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Prerequisites: None
Corequisites: None
Type: LEC
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Prerequisites: None
Corequisites: None
Type: LEC
Examines internal organization, functions, and impact of political parties from a comparative perspective.

PSC 429 International Organizations
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines internal organization, functions, and impact of political parties from a comparative perspective.
PSC 426 Comparative Political Institutions
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Focuses on comparing institutions in democratic countries. It asks, and seeks to answer, the questions of how democracies can arrange themselves and why these different arrangements matter.

PSC 430 Human Rights
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines the development, primarily since World War II, of international systems for the promotion and protection of human rights.

PSC 436 Citizen Participation
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Considers individual political behavior patterns in selected countries, and explores differences and similarities across nations in voting behavior and public opinion.

PSC 438 Civil-Military Relations
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines the armed forces’ involvement in political affairs, civilian control of the military, causes and effects of military seizures of control, and the importance of coercion within the political process.

PSC 451 Major Political Philosophers
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Course will emphasize the detailed analysis of the thought of a particular philosopher or tradition. Examples would include Aristotle, Hegel, Nietzsche, or Current Marxist Thought.

PSC 470 Legal Political Theory
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Considers the structure of laws in general, the question of sanctions, and the relation of justice to law.

PSC 490 Honors Seminar
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Examines the range of contemporary politics and unresolved controversies. Students will submit proposals for the senior year honors thesis.

PSC 492 Pre-Law Honors Seminar
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Offers at least a select number of upper-class political scientists and legal studies majors who plan to go to law school to delve deeply into an important issue in the American legal system. Provides an opportunity for students to read cases and secondary literature on the selected topic, and develop legal research and library skills by writing a paper on a subject related to the seminar’s main focus.

PSC 495 Senior Seminar
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
The content of this course is variable and therefore it is repeatable for credit. The University Grade Repeat Policy does not apply.

PSC 496 Political Science Internship
Credits: 1
Prerequisites: Permission of Instructor
Corequisites: None
Type: TUT
Community Internship Program—Involves service with state legislators from the area, city or county government, and various public agencies. Work includes policy research, drafting legislation, field investigations, program evaluations, and contacts with other organizations.
Washington Semester Internship Program—Involves a semester placement in Washington under the direction of a SUNY Brockport Program Officer. Participation includes an internship, a research seminar, and a research paper.
NYS Legislative Internship Program—Involves semester placement in the Albany office of a state senator or assembly member; requires forty-plus-hour weeks as legislative assistants under a professional staff member’s guidance. Also requires special readings, weekly seminar, short reports, and a major research paper, under the direction of SUNY faculty-in-residence.

PSC 497 Honors Thesis
Credits: 3
Prerequisites: None
Corequisites: None
Type: TUT
Involves supervised independent study leading to the submission of an honors thesis. Requires permission of instructor.

PSC 499 Independent Study
Credits: 1
Prerequisites: None
Corequisites: None
Type: TUT
Requires permission of instructor.

POR 101 Elementary Portuguese 1st Semester
Credits: 5
Prerequisites: POR 101
Corequisites: None
Type: LEC
Covers fundamentals of Portuguese pronunciation, vocabulary, and grammar.

POR 201 Intermediate Portuguese 1st Semester
Credits: 3
Prerequisites: POR 101
Corequisites: None
Type: LEC
Involves practice in grammar, pronunciation, and conversation practice; expands student vocabulary through selected readings.

POR 202 Intermediate Portuguese 2nd Semester
Credits: 3
Prerequisites: POR 101
Corequisites: None
Type: LEC
Involves practice in grammar, pronunciation, and conversation practice; expands student vocabulary through selected readings.

POR 498 Undergraduate Research
Credits: 1
Prerequisites: Permission of Instructor
Corequisites: None
Type: TUT
Students collaborate with faculty research mentors on an ongoing faculty research project or conduct independent research under the guidance of a faculty member.
Psychology

PSY 101 Introductory Psychology
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
General survey of perception; learning and memory; cognitive, developmental, personality, abnormal, and social psychology; and behavioral neuroscience. Requires participation in research or a short paper.

PSY 207 Psychological Statistics
Credits: 4
Prerequisites: MTH 115 or equivalent
Corequisites: None
Type: LEC/LAB
Graphs; permutations; combinations; probability; regression; correlation; analysis of variance; descriptive and inferential statistics; parametric and nonparametric tests appropriate to psychological research. Three hours of lecture and one hour of recitation weekly.

PSY 250 Scientific Inquiry in Psychology
Credits: 3
Prerequisites: PSY 101, PSY 207
Corequisites: None
Type: LEC
The research process; deductive and inductive reasoning in science; nature of theory; hypothesis testing and empirical data; scientific knowledge and its applications.

PSY 321 Psychology of Personality
Credits: 3
Prerequisites: PSY 101
Corequisites: None
Type: LEC
Theory, research, and measurement related to the description, development, and dynamics of the normal personality.

PSY 322 Abnormal Psychology
Credits: 3
Prerequisites: PSY 101
Corequisites: None
Type: LEC
Theory and description of the major behavior disorders and the psychopathology of everyday life; causes and treatment of these disorders.

PSY 323 Community Psychology
Credits: 3
Prerequisites: PSY 101
Corequisites: None
Type: LEC
Introduces theoretical concepts and developing practices in community psychology and community mental health.

PSY 324 Clinical Psychology
Credits: 3
Prerequisites: PSY 101
Corequisites: None
Type: LEC
Introduces clinical psychology. Methods of assessing abnormal behavior, modes of intervention, theories of treatment, and ethical issues.

PSY 325 Health Psychology
Credits: 3
Prerequisites: PSY 101
Corequisites: None
Type: LEC
Introduces the scientific study of the behavioral and social aspects of health.

PSY 331 Social Psychology
Credits: 3
Prerequisites: PSY 101
Corequisites: None
Type: LEC
Behavior of individuals and their relations with others; aggression; attraction; attitude formation and change; conformity; obedience; helping; stereotypes; group processes.

PSY 332 Social Conflict and its Resolution
Credits: 3
Prerequisites: PSY 101
Corequisites: None
Type: LEC
Overview of social conflict theory and of conflict resolution practice. Topics include the nature and cause of conflict, strategic choice in conflict, escalation, negotiation, and third-party intervention. Emphasizes psychological approaches, but is not limited to them.

PSY 333 Psychology of Work in Organizations
Credits: 3
Prerequisites: PSY 101
Corequisites: None
Type: LEC
Theory, research, and practices of organizational psychologists; behavior of individuals within organizations; principles of industrial psychology.

PSY 336 Developmental Psychology
Credits: 3
Prerequisites: PSY 101
Corequisites: None
Type: LEC
Major developmental changes in areas of human behavior, cognition, personality, and social life from the perspective of current theories about development.

PSY 341 Cognitive Psychology
Credits: 3
Prerequisites: PSY 101
Corequisites: None
Type: LEC
Information-processing approach to human behavior; how people interpret and understand the environment; recognition; memory; language.

PSY 342 Introduction to Cognitive Science: Concepts of the Mind
Credits: 3
Prerequisites: PSY 101
Corequisites: None
Type: LEC
An interdisciplinary approach to the understanding of knowledge and mind, guided by principles of formal systems and computation. Concepts and approaches from psychology, philosophy, artificial intelligence, linguistics, and neuroscience.

PSY 343 Sensory Processes and Perception
Credits: 3
Prerequisites: PSY 101
Corequisites: None
Type: LEC
Surveys experimental data and theories of perception. Perceptual organization and neurophysiology of brain systems, and neural and computational representations involved in vision, hearing, and cutaneous and chemical senses.

PSY 351 Biopsychology
Credits: 3
Prerequisites: PSY 101
Corequisites: None
Type: LEC
Physiological studies, mainly on the nervous system, relevant to selected theoretical issues in perception, learning, motivation, and problem solving.

PSY 402 Psychopharmacology
Credits: 3
Prerequisites: PSY 351, psychology major
Corequisites: None
Type: LEC
Basic brain chemistry and its influence on behavior. Distribution and elimination of drugs, drug-receptor interactions, and the neuroanatomical distribution of specific neurotransmitter systems. Special topics in biological psychiatry.

PSY 404 Alcohol and Health
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: LEC
The relationship between alcohol use and psychological, social, and physical well-being. Conceptualizes problem drinking within a social psychological paradigm; implications of different conceptions for the prevention and treatment of alcohol problems.

PSY 405 Data Analysis Techniques
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: LEC
Instruction and hands-on experience employing SPSS statistical package on desktop computers. Includes nonparametric statistics, T-tests, ANOVA (including factorial and repeated measures designs), and introduces correlation, regression, and factor analysis. Emphasizes appropriate choice among statistical methods.

PSY 407 Consciousness and the Self
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Examines how the unconscious mind works, how much of the self resides in the unconscious, and how the unconscious can and cannot be accessed. Class is broken up into a number of different activities; each is designed to develop different skills while learning about consciousness and the self.

PSY 408 Small-Group Processes
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: LEC
Reviews research on small-group dynamics, with attention to applying these concepts to improve groups in organizations.

PSY 409 Organizational Development and Change
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: LEC
Studies methods of working with organizations to improve their effectiveness. Involves individual, group, and organizational-level change processes.

PSY 410 Existential Psychology
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: LEC
Existential thinking pervades our concepts of personality, motivation, learning, cognition, and more. In addition, this course explores how our views of human relationships influence our satisfaction in love, therapy, and family.

PSY 411 Self and Self-Esteem
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: LEC
PSY 412 Psychology of Aggression and Violence
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: LEC
Theory and data about the causes and control of human violence and aggression.

PSY 413 Social Cognition
Credits: 3
Prerequisites: PSY 331, psychology major
Corequisites: None
Type: LEC
Overview of recent theory and research in social cognition, including attribution theory, schema, social memory, stereotyping, and heuristics.

PSY 414 Assessment of Individual Differences
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: LEC
Personality differences and intellectual functioning; IQ tests; projective tests; behavioral assessments.

PSY 415 Psychology and Law
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: LEC
Examines legal issues related to selected social problems in light of psychological theory, research, and clinical experience.

PSY 416 Reasoning and Problem Solving
Credits: 3
Prerequisites: PSY 341 or PSY 342, psychology major
Corequisites: None
Type: LEC
Discusses some principles of rational thought and some of the psychological processes that lead to successful and unsuccessful resolution of problems and other conceptual tasks. Explores how age and experience affect these processes.

PSY 417 Psychology of Identity
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: LEC
Conceptions of identity or self as they appear in current psychological literature; how people develop and maintain a view of self and the self-referent nature of their world.

PSY 418 Behavior Modification and Behavioral Medicine
Credits: 3
Prerequisites: PSY 322, psychology major
Corequisites: None
Type: LEC
Introduces current knowledge in behavior modification and behavioral medicine; critical examinations of the limitations, as well as the assets, of particular methods; ethical issues raised by work in this area.

PSY 419 Biological Bases of Memory
Credits: 3
Prerequisites: PSY 351, psychology major
Corequisites: None
Type: LEC
Surveys recent research in the neurosciences concerning the processes involved in long-term registration of information in the central nervous system. These processes range from the level of single synapses to complex brain systems.

PSY 420 Close Relationships
Credits: 3
Prerequisites: Psychology Major
Corequisites: None
Type: LEC
Focuses on current research and theory concerning close relationships. Topics to be covered will include attachment, attraction, love, interdependence, communication, relationship conflict, social support, and health.

PSY 421 Systems and Theories of Psychology
Credits: 3
Prerequisites: psychology major, completion of at least two 300-level requirements
Corequisites: None
Type: LEC
Historical antecedents and the evolution of contemporary theoretical approaches and concepts of psychology.

PSY 422 Anxiety Disorders
Credits: 3
Prerequisites: psychology major; PSY 322 recommended
Corequisites: None
Type: LEC
In-depth analysis of the symptoms, etiology, and treatment of the major anxiety disorders from the perspective of both the practicing clinician and the research scientist.

PSY 423 Mood Disorders
Credits: 3
Prerequisites: psychology major; PSY 322 recommended
Corequisites: None
Type: LEC
Contemporary ideas and research on mood disorders, including their classification, epidemiology, etiology, and treatment.

PSY 424 Abnormal Child Psychology
Credits: 3
Prerequisites: psychology major; PSY 322 recommended
Corequisites: None
Type: LEC
Description, diagnosis, causes, and treatment of childhood disorders, including ADHD, depression, aggression, anxiety, autism, and others.

PSY 425 Psychology of Human Sexuality
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: LEC
Why and how we behave sexually; biological origins, and psychological and social determinants; private and public morality; absolute versus relative standards; hormones; psychosexual development; variations and deviations in sexual behavior.

PSY 426 Biological Bases of Mental Disorders
Credits: 3
Prerequisites: PSY 351, psychology major
Corequisites: None
Type: LEC
Biological factors in mental disorders; for example, in schizophrenia, anxiety disorders, depression, and obsessive-compulsive disorders.

PSY 427 Adult Development and Aging
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: LEC
Developmental theory, methods, and empirical evidence needed to describe and understand the psychological changes that take place in adulthood and old age.

PSY 428 Language Development
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: LEC
Starting with a consideration of the infant's basic perceptual capacities, examines the role of innate and experiential factors in developing the capacity to speak and understand language.

PSY 429 Psychophysiology
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: LEC
Basic physiological processes; physiological aspects of behavior, emotions, and cognition; psychophysiological methods.

PSY 430 Evolutionary Psychology
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: LEC
Major assumptions and research on how human behavior has evolved; grounded in Darwin's theory of evolution but focuses on psychological processes. Topics include survival behaviors, mating strategies, parenting, help giving, and dominance.

PSY 431 Mind-Body Connection in a Social World
Credits: 3
Prerequisites: Psychology Major
Corequisites: None
Type: LEC
The connection between mind and body from a social psychological perspective; effects on various physiological systems; using body responses to understand psychological process.

PSY 432 Psychology and Environmental Hazards
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: LEC
Psychological approaches to understanding the effects of environmental hazards, including background in epidemiology, cancer, clinical psychological assessment, and case studies.

PSY 433 Animal Behavior
Credits: 3
Prerequisites: PSY 351, permission of instructor
Corequisites: None
Type: LEC
Studies some principles of rational thought and some of the psychological processes that lead to successful and unsuccessful resolution of problems and other conceptual tasks. Explores how age and experience affect these processes.

PSY 434 Evolutionary Psychology
Credits: 3
Prerequisites: PSY 351, psychology major
Corequisites: None
Type: LEC
The connection between mind and body from a social psychological perspective; effects on various physiological systems; using body responses to understand psychological process.

PSY 435 Psychology of Reproduction
Credits: 3
Prerequisites: PSY 351, psychology major
Corequisites: None
Type: LEC
Research on brain and hormone involvement in the control of behaviors relevant to all phases of reproduction (parental behavior and sex); infrahuman and human systems.

PSY 436 Neuropsychology
Credits: 3
Prerequisites: PSY 351, psychology major
Corequisites: None
Type: LEC
Reviews and, wherever possible, synthesizes research studies carried out mainly on humans that increase our understanding of how the brain works.
PSY 437 Cross-Cultural Psychology
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: LEC
Examines the difference in concepts of the self, interpersonal processes, and group processes across cultures.

PSY 438 Sport and Exercise Psychology
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: LEC
Topics include the nature of sport psychology, personality and sport, motivational orientations in sport, self-referent thought in sport and physical activity, the arousal-athletic performance relationship, gender and sport behavior, and group dynamics.

PSY 439 Biopsychology of Stress
Credits: 3
Prerequisites: PSY 351, psychology major
Corequisites: None
Type: LEC
Stress and the body's various reactions to it.

PSY 440 Hormones and Behavior
Credits: 3
Prerequisites: PSY 351, psychology major
Corequisites: None
Type: LEC
Familiarizes students with the structure, function, and principles of the endocrine/neuroendocrine system and how this system helps to initiate and regulate behavior (e.g., stress, reproduction, cyclicity in behavior, ingestion, and aggression).

PSY 443 The Neurobiology of Communication in Animals
Credits: 3
Prerequisites: PSY 351, psychology major
Corequisites: None
Type: LEC
Focuses on the evolution, function, design, and diversity of animal communication systems such as song and visual signaling in birds, calls and echolocation in dolphins, echolocation and olfactory signaling in bats, olfactory signaling in insects, and electrical signaling in fish.

PSY 445 Memory
Credits: 3
Prerequisites: psychology major; PSY 341 recommended
Corequisites: None
Type: LEC
How knowledge is represented, stored, and retrieved by humans; attention; language comprehension; nature and causes of forgetting.

PSY 446 Animal Cognition
Credits: 3
Prerequisites: psychology major, PSY 341 recommended
Corequisites: None
Type: LEC
Focuses on animal minds, including perception, attention, representation, concept and rule learning, judgments of time and number, tool use, communication, self-awareness, and awareness of the other.

PSY 447 Psychology of Music
Credits: 3
Prerequisites: psychology major, PSY 341 recommended
Corequisites: None
Type: LEC
How we perceive, remember, and respond to music. Representation of musical knowledge, emotional and aesthetic response to music, listening styles of novices and experts, music's role in human culture.

PSY 448 Psycholinguistics
Credits: 3
Prerequisites: PSY 341, psychology major
Corequisites: None
Type: LEC
What individuals know when they know a natural language; how that language is acquired; what the facts of language tell us of the structure of the mind.

PSY 449 Motivational Theory
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: LEC
Development of ideas concerning the problem of motivation; important experiments in the development of these ideas; current theories of motivation; data relevant to an examination of these theories.

PSY 450 Advanced Research Methods in Psychology
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: LEC
Development and application of skills needed to conduct and evaluate research. Strongly recommended for students who plan to attend graduate school.

PSY 451 Drug Addiction
Credits: 3
Prerequisites: PSY 351, psychology major
Corequisites: None
Type: LEC
The scientific study of drug addiction, emphasizing biological and psychological theories.

PSY 452 Psychology of Prejudice
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: LEC
Psychological aspects of historical and contemporary race and gender relations in the United States. Topics include stereotyping, prejudice, discrimination, conflict, and cooperation.

PSY 455 Applied Behavior Analysis with Children 1
Credits: 3
Prerequisites: permission of instructor
Corequisites: PSY 498
Type: SEM
PSY 455 and PSY 456 offer students the opportunity to 1) learn about current assessment and treatment methodologies for school-age children with disruptive behavior problems and 2) apply this knowledge in hands-on interactions with children within actual school settings. Topics covered include an overview of disruptive behavior disorders found in school-age children, functional behavioral assessment tools used with children, and empirically supported treatments for children with disruptive behavior problems.

PSY 456 Applied Behavior Analysis with Children 2
Credits: 3
Prerequisites: permission of instructor
Corequisites: PSY 498
Type: SEM
PSY 455 and PSY 456 offer students the opportunity to 1) learn about current assessment and treatment methodologies for school-age children with disruptive behavior problems and 2) apply this knowledge in hands-on interactions with children within actual school settings. Topics covered include an overview of disruptive behavior disorders found in school-age children, functional behavioral assessment tools used with children, and empirically supported treatments for children with disruptive behavior problems.

PSY 457 Cognitive Development
Credits: 3
Prerequisites: PSY 341, psychology major
Corequisites: None
Type: LEC
The growth of cognitive functioning from infancy to adolescence. Considers the major theoretical approaches that are taken in studying cognitive development.

PSY 461 Senior Seminar
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: SEM
Topical seminars and laboratory courses.

PSY 464 Senior Seminar
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: SEM
Topical seminars and laboratory courses.

PSY 465 Senior Seminar
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: SEM
Topical seminars and laboratory courses.

PSY 466 Senior Seminar
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: SEM
Topical seminars and laboratory courses.

PSY 467 Senior Seminar
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: SEM
Topical seminars and laboratory courses.

PSY 468 Senior Seminar
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: SEM
Topical seminars and laboratory courses.

PSY 469 Senior Seminar
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: SEM
Topical seminars and laboratory courses.

PSY 470 Senior Seminar
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: SEM
Topical seminars and laboratory courses.

PSY 471 Senior Seminar
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: SEM
Topical seminars and laboratory courses. PSY 470-PSY 478 are part of the Cognitive and Behavioral neurosciences courses.

PSY 473 Senior Seminar
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: SEM
Topical seminars and laboratory courses. PSY 470-PSY 478 are part of the Cognitive and Behavioral neurosciences courses.

PSY 474 Senior Seminar
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: SEM
Topical seminars and laboratory courses. PSY 470-PSY 478 are part of the Cognitive and Behavioral neurosciences courses.
PSY 475 Senior Seminar
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: SEM
Topical seminars and laboratory courses. PSY 470-PSY 475 are part of the Cognitive and Behavioral neurosciences courses.

PSY 476 Special Topics
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: LEC
Current theories, research, and controversies in the major subareas of psychology. Specific topics and content change each semester.

PSY 477 Special Topics
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: LEC
Current theories, research, and controversies in the major subareas of psychology. Specific topics and content change each semester.

PSY 478 Special Topics
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: LEC
Current theories, research, and controversies in the major subareas of psychology. Specific topics and content change each semester.

PSY 479 Special Topics
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: LEC
Current theories, research, and controversies in the major subareas of psychology. Specific topics and content change each semester.

PSY 480 Special Topics
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: LEC
Current theories, research, and controversies in the major subareas of psychology. Specific topics and content change each semester.

PSY 481 Special Topics
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: LEC
Current theories, research, and controversies in the major subareas of psychology. Specific topics and content change each semester.

PSY 482 Special Topics
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: LEC
Current theories, research, and controversies in the major subareas of psychology. Specific topics and content change each semester.

PSY 483 Special Topics
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: LEC
Current theories, research, and controversies in the major subareas of psychology. Specific topics and content change each semester.

PSY 484 Special Topics
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: LEC
Current theories, research, and controversies in the major subareas of psychology. Specific topics and content change each semester.

PSY 485 Special Topics
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: LEC
Current theories, research, and controversies in the major subareas of psychology. Specific topics and content change each semester.

PSY 486 Special Topics
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: LEC
Current theories, research, and controversies in the major subareas of psychology. Specific topics and content change each semester.

PSY 487 Special Topics
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: LEC
Current theories, research, and controversies in the major subareas of psychology. Specific topics and content change each semester.

PSY 488 Special Topics
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: LEC
Current theories, research, and controversies in the major subareas of psychology. PSY 485-PSY 490 are part of the Cognitive and Behavioral neurosciences courses. Specific topics and content change each semester.

PSY 489 Special Topics
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: LEC
Current theories, research, and controversies in the major subareas of psychology. PSY 485-PSY 490 are part of the Cognitive and Behavioral neurosciences courses. Specific topics and content change each semester.

PSY 490 Special Topics
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: LEC
Current theories, research, and controversies in the major subareas of psychology. PSY 485-PSY 490 are part of the Cognitive and Behavioral neurosciences courses. Specific topics and content change each semester.

PSY 491 Special Topics
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: LEC
Current theories, research, and controversies in the major subareas of psychology. PSY 485-PSY 490 are part of the Cognitive and Behavioral neurosciences courses. Specific topics and content change each semester.

PSY 492 Special Topics
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: LEC
Current theories, research, and controversies in the major subareas of psychology. PSY 485-PSY 490 are part of the Cognitive and Behavioral neurosciences courses. Specific topics and content change each semester.

PSY 493 Special Topics
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: LEC
Current theories, research, and controversies in the major subareas of psychology. PSY 485-PSY 490 are part of the Cognitive and Behavioral neurosciences courses. Specific topics and content change each semester.

PSY 494 Special Topics
Credits: 3
Prerequisites: psychology major
Corequisites: None
Type: LEC
Current theories, research, and controversies in the major subareas of psychology. PSY 485-PSY 490 are part of the Cognitive and Behavioral neurosciences courses. Specific topics and content change each semester.

PSY 495 Supervised Teaching
Credits: 1
Prerequisites: psychology major
Corequisites: None
Type: TUT
Undergraduate teaching assistant (UTA) positions are available for certain psychology courses to those students who have completed the course or its equivalent with a grade of A, have achieved junior status, and have a minimum GPA of 3.0 overall. Students must apply for UTA positions with the appropriate instructor. Credit does not count toward the major. Graded P/F.

PSY 496 Supervised Applied Experience
Credits: 1
Prerequisites: psychology major
Corequisites: None
Type: TUT
A program of applied work in a community, government, or private agency or organization related to the major in psychology. Must be agreed upon by the student and a faculty sponsor in the department. Credit does not count toward the major. Graded P/F.

PSY 497 Honors
Credits: 1
Prerequisites: psychology major; permission of instructor
Corequisites: None
Type: SEM
Independent research for two semesters with a faculty member. Apply in junior year.

PSY 498 Undergraduate Research
Credits: 1
Prerequisites: psychology major
Corequisites: None
Type: TUT
A program of supervised research to be agreed upon by the student and a faculty sponsor in the department, including procedures for evaluating student performance. Student receives a letter grade.

PSY 499 Independent Study
Credits: 1
Prerequisites: psychology major
Corequisites: None
Type: TUT
A program of scholarship to be agreed upon by the student and a faculty sponsor in the department, including procedures for evaluating student performance. Student receives a letter grade.
Undergraduate Course Descriptions 2008-09

Religious Studies

RSP 113 Myth and Religion in the Ancient World
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Provides an introduction to the mythology of the Greeks and Romans. In addition to considering the myths themselves, we study how they have been employed by ancient through contemporary cultures as reflected in areas ranging from religious and social practice to works of art and architecture.

RSP 210 Introduction to the Old Testament
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces the traditions of the Hebrews throughout the patriarchal narrative of Genesis, the law corpus in Exodus, and the early history in Judges, Samuel, and Kings. Studies texts in the context of history and literature of the ancient Near East.

RSP 211 Introduction to Catholicism
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces the history, beliefs, and practices of Catholic Christianity. Examines issues in contemporary Catholicism and its relationship to American society.

RSP 213 World Religions
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces the world's religious systems and their cultural bases, including Hinduism, Buddhism, Taoism, Confucianism, Shinto, Judaism, and modern religious substitutes.

RSP 218 Jesus: His Life and History
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Investigates the life and history of Jesus. As we explore the facts, opinions, and meaning attendant to the Historical Jesus, we examine the difficulties of such an intellectual and historical inquiry, review the controversies consequent to this famous scholarly pursuit, and assess our own position and thinking.

RSP 220 Christian Spirituality
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Classic thinkers of Christianity, examines spirituality and spiritual formation. Analysis of the writings of devotional, mystic, and intellectual writers from five periods of Christian history, covering approximately 30 major contributors.

RSP 223 Western Church History
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines the development of the Christian church in western European history from Pentecost to the start of the Enlightenment. Covers material in three major divisions of time: the ancient church (to A.D. 600), the medieval church (600-1517), and the Reformation church (1517-1700). Emphasizes the important leaders and issues of each era.

RSP 224 American Church History
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Surveys the Christian church's background and development in American history from the first establishment to the present era. Emphasizes major individuals associated with the American church, and covers material in four major divisions: the colonial era (1607-1789), the national era (1790-1860), the federal era (1861-1919), and the modern era (1920-present).

RSP 231 Paul and the Early Church
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Considers Paul's first letter to the Corinthians (1st Corinthians) and early church struggles for orthodoxy.

RSP 242 New Testament Literature and Thought
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Selected topics chosen from the New Testament: the incarnation's significance, sacrifice, resurrection, apocalyptic expectation, and so forth.

RSP 244 Workshop in New Testament
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM

RSP 245 Gospel of Luke and Acts
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines the development of the Christian church in Palestine, Egypt, Syria, Asia Minor, and Rome. Also explores non-Pauline New Testament literature and pseudo-epigraphic works, such as the Book of Enoch, letters of Ignatius, Gospel of Thomas, Shepherd of Hermes, and the Apocryphal.

RSP 246 Gospel of John and Apocalypse
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Engages in a comprehensive study of John's gospel—its literary structure, characteristics, primary sources, and content followed by an intensive investigation of his account of the spread of Jesus's gospel by the early disciples in Acts, primarily Peter and Paul.

RSP 247 Workshop in New Testament Literature and Thought
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM

RSP 248 Old Testament Prophets
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Undertakes a comprehensive study of the fourth gospel, including its authorship, time, and situation of composition; and its unique theological perspective. By way of comparison and contrast, the course examines the book of Apocalypse or Revelation.

RSP 260 Introduction to Christian Ethics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Considers specific ethical issues in light of the message of Jesus, the Christian concept of love, how ethical decisions are made, and the role of Jesus in ethics.

RSP 282 Christianity in Western Culture
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Combines a general survey of the history of Western culture from the Renaissance to the present with a study of the role of Christianity in the formation and development of that culture.
RUS 101 Elementary Russian 1st Semester
Credits: 5
Prerequisites: None
Corequisites: None
Type: LEC
Provides a basic introduction to pronunciation, reading, writing, and conversation; introduces cultural topics.

RUS 102 Elementary Russian 2nd Semester
Credits: 5
Prerequisites: RUS 101
Corequisites: None
Type: LEC
Provides a basic introduction to pronunciation, reading, writing, and conversation; introduces cultural topics.

RUS 104 Russian for Native Speakers
Credits: 5
Prerequisites: None
Corequisites: None
Type: LEC
For students who have either 1) had previous experience with Russian but would benefit from a review before going into intermediate level courses, or 2) been exposed to Russian informally in their home setting, but who do not speak Russian fluently, have not had any formal training in Russian, and are not literate in Russian.

RUS 223 Intermediate Russian 1st Semester
Credits: 5
Prerequisites: RUS 102 or permission of instructor
Corequisites: None
Type: LEC
Sequel to RUS 101-RUS 102. Continues the study of basic grammar. Communicative topics include weather, phone conversations, travel, movies, TV, reading, free time, health, and holidays. Involves further work with authentic reading and listening materials and practical writing tasks.

RUS 224 Intermediate Russian 2nd Semester
Credits: 5
Prerequisites: RUS 223 or permission of instructor
Corequisites: None
Type: LEC
Sequel to RUS 101-RUS 102. Continues the study of basic grammar. Communicative topics include weather, phone conversations, travel, movies, TV, reading, free time, health, and holidays. Involves further work with authentic reading and listening materials and practical writing tasks.

RUS 229 Women in Russian Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Major women writers from the beginning of Russian literature to the present.

RUS 301 Third-Year Russian 1st Semester
Credits: 3
Prerequisites: RUS 224 or permission of instructor
Corequisites: None
Type: LEC
Develops reading, conversation, and grammar, focusing on Russian culture. Topics include meeting people, weddings, family issues, Russian cooking, traditions and customs, nature, art, and the Russian soul. A video accompanies the text.

RUS 302 Third-Year Russian 2nd Semester
Credits: 3
Prerequisites: RUS 301 or permission of instructor
Corequisites: None
Type: LEC
Develops reading, conversation, and grammar, focusing on Russian culture. Topics include meeting people, weddings, family issues, Russian cooking, traditions and customs, nature, art, and the Russian soul. A video accompanies the text.

RUS 311 Russian Culture
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines highlights of Russian culture, including art, architecture, music, literature, religion, food, customs, the Russian soul, the burning question of what it means to be Russian, and Russia's relationship to the West.

RUS 324 Russian Literature in Translation
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Selection of readings from Russian literature in English translation.

RUS 350 Russian Topics: Culture and Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Explores a selected topic in Russian linguistics, literature, or cultural history.

RUS 408 Fourth-Year Russian
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Engages students in advanced Russian conversation and composition.

RUS 422 Russia Culture
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Seminar on specific topics in contemporary Russian culture.

RUS 426 19th Century and 20th Century Literary Masterpieces
Credits: 3
Prerequisites: Permission of instructor
Corequisites: None
Type: LEC
Supplements regular offerings of the department. Students must secure the instructor's permission before registering for independent study.

Social Sciences Interdisciplinary

SSC 100 Careers in Human Services
Credits: 1
Prerequisites: Permission of Instructor
Corequisites: None
Type: LEC
Explores the range of professional and graduate school opportunities in human services and related fields.

ASI 100 University Honors Seminars
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Restricted to students in the University Honors College; offered under specific titles that vary from semester to semester. Usually satisfies general education requirements, as well as honors requirements.

SSC 103 Introduction to Health and Human Services
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies the health and human service system in the United States and locally, as it has been affected by history, changing values, and changes in the economic and political environment. Particularly emphasizes the gerontological, childhood, and community mental health service systems.

SSC 118 Introduction to Environmental Studies
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Involves an interdisciplinary approach to environmental issues. Explores ecological concepts, human environment, air and water pollution, pesticides, solid waste handling, mineral and energy resources, the nuclear fuel cycle, population and food resources, and environmental control.

ASI 200 University Honors Seminar
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Restricted to students in the University Honors College; offered under specific titles that vary from semester to semester. Usually satisfies general education requirements, as well as honors requirements.
SSC 209 Case Management
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
An applied skills course for the delivery of human services. Considers the roles and functions of case management and various vulnerable client groups as target populations. Involves analyzing cases for client needs and comprehensive service planning. Practice competency, quality of care, and ethical standards are major concerns of the course. Small group activities and community-based interviews are important student learning experiences.

SSC 210 Skill Development in Human Service
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Introduces specific techniques and skills employed in human services careers.

SSC 213 Social Research Methods
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces procedures by which social scientists gather, analyze, and interpret information about the social world. Particularly emphasizes the use of campus-based resources for social service research.

SSC 218 Issues in Mental Health
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Identifies community mental health service components and explores trends and issues in the delivery of mental health services.

SSC 221 Writing in the Law
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines the legal writing process. Introduces students to the unique organization and structure of the law library, traditional as well as electronic. Requires group research and individual writing assignments.

SSC 225 Statistics for Social Sciences
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Provides a foundation in statistical techniques for interpreting quantitative social data, including binomial and normal distributions, the Chi-Square test, hypothesis testing, and regression analysis.

SSC 238 Science, Religion, and Nature
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
An environmental philosophy course that explores the impact of religion and science upon our perceptions of nature. Involves diverse studies in the areas of mythology, Eastern traditions, Western mysticism, Shamanism, the Gaia hypothesis, and environmental issues. Also includes a weekend workshop focused upon nature attunement, survival skills, and ecological studies.

ASI 300 University Honors Seminar
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Restricted to students in the University Honors College; offered under specific titles that vary from semester to semester. Usually satisfies general education requirements, as well as honors requirements.

SSC 305 Applied Child Development and Learning
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Integrates theory and current research with practical aspects of child rearing and family health. Explores developmental processes and behavior of young children as individuals and in group settings.

SSC 315 Field Ecology
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
A field-oriented course that explores the ecology of diverse ecosystems. Classes are conducted both on and off campus, and focus on interpretive experiences in the areas of botany, zoology, geology, heratology, ornithology, and general ecology.

SSC 317 Environmental Politics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Focuses on the relationship between environmental problems and the political process. Explores definitions of an environmentally sustainable society. Then we attempt to answer the question of "how to get there from here." This involves developing a theory of social change by examining a number of case studies. We study local environmental controversies from a political perspective through firsthand involvement or guest speakers. We also look at national environmental conflicts, such as the backlash against mainstream environmentalism created by the "Wise Use" movement and contemporary political forces championing property rights and states' rights.

SSC 320 Issues in Mental Retardation/Developmental Disabilities
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Explores causation, prevention, advocacy, housing, education, employment, and community services. Defines career opportunities in this area.

SSC 326 Great Lakes Ecology
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
The Great Lakes hold nearly 20% of all the available fresh water on the planet. They provide drinking water, hydroelectricity, and both economic and recreational opportunities to millions who live around their shores. This class provides an understanding of the Great Lakes, from their formation to the important role they play in the political and ecological systems of North America. Focuses on historical and ecological aspects, as well as current political and policy issues surrounding the Great Lakes-St. Lawrence ecosystem. Students learn about the geology, biota, ecology, management, and social and political aspects of the Great Lakes, especially the lower lakes (Erie and Ontario). The course uses a multi-faceted ecosystem approach to diverse topics involved with understanding these complex ecological systems.

SSC 337 Social-Ethical Values in Medicine
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Applies ethical theories to analysis of important moral problems in health care and medicine. Same as PHI 337.

SSC 343 Violence and the Family
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Addresses issues in violence and violence prevention with sections on theoretical definitions and historical context. Topics include the social context of violent behavior in families, child abuse and neglect, abusive parenting, violence against women, abuse of the elderly, violence in communities of color, and the media's influence on the development of antisocial behavior. Explores special problems of child protection services and the justice system's approach toward domestic violence.

SSC 360 Environmental Impact Statements
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Examines the preparation of environmental impact statements (EIS) in response to federal and state requirements. Explores the mechanics of preparing and evaluating the EIS, as well as considering alternative courses of action.

SSC 365 The Family Process
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces the aging process. Explores physiological and clinical aspects.

SSC 385 Energy, Environment, and Society
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Considers the family: What is it? How does it work? How does it fail to work? Provides both United States and cross-cultural perspectives. Explores the theoretical foundation of family therapies.

SSC 386 Great Lakes Ecology
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Focuses on the relationship between energy use and the associated impact on the environment and society. Explores our dependence upon traditional energy resources such as oil, coal, nuclear and natural gas as well as renewable energy resources such as geothermal, wind, solar, etc. Examines solutions to the difficult process of changing current energy consumption trends.

Nature, Science, Religion, and Society
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Examines the preparation of environmental impact statements (EIS) in response to federal and state requirements. Explores the mechanics of preparing and evaluating the EIS, as well as considering alternative courses of action.

SSC 390 Social Research Methods
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces procedures by which social scientists gather, analyze, and interpret information about the social world. Particularly emphasizes the use of campus-based resources for social service research.

SSC 391 Issues in Mental Health
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Identifies community mental health service components and explores trends and issues in the delivery of mental health services.

SSC 392 Writing in the Law
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines the legal writing process. Introduces students to the unique organization and structure of the law library, traditional as well as electronic. Requires group research and individual writing assignments.

SSC 393 Statistics for Social Sciences
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Provides a foundation in statistical techniques for interpreting quantitative social data, including binomial and normal distributions, the Chi-Square test, hypothesis testing, and regression analysis.

SSC 394 Science, Religion, and Nature
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
An environmental philosophy course that explores the impact of religion and science upon our perceptions of nature. Involves diverse studies in the areas of mythology, Eastern traditions, Western mysticism, Shamanism, the Gaia hypothesis, and environmental issues. Also includes a weekend workshop focused upon nature attunement, survival skills, and ecological studies.

ASI 395 University Honors Seminar
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Restricted to students in the University Honors College; offered under specific titles that vary from semester to semester. Usually satisfies general education requirements, as well as honors requirements.

SSC 396 Field Ecology
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
A field-oriented course that explores the ecology of diverse ecosystems. Classes are conducted both on and off campus, and focus on interpretive experiences in the areas of botany, zoology, geology, heratology, ornithology, and general ecology.

SSC 397 Social-Ethical Values in Medicine
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Applies ethical theories to analysis of important moral problems in health care and medicine. Same as PHI 337.
SSC 390 Human Services Administration
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Examines the practical aspects of managing a human services organization. Discusses the basic functions of management, including planning, budgeting, personnel, and organizational development. Presents these themes around such functions as team management, the consumer as customer, innovation, and creativity in attaining excellence.

SSC 391 Cognitive Science Colloquium
Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
Acquaints students with ongoing research in the range of disciplines affiliated with cognitive science. Primarily requires attendance at the weekly colloquium and symposium series of the Center for Cognitive Science. Requires students to read any relevant literature that has been publicly announced prior to the upcoming colloquium or symposium.

ASI 400 University Honors Seminar
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Restricted to students in the University Honors College; offered under specific titles that vary from semester to semester. Usually satisfies general education requirements, as well as honors requirements.

ASI 401 Arts and Sciences Interdisciplinary Community-Linked Research
Credits: 4
Prerequisites: None
Corequisites: None
Type: LAB
Provides research experience for undergraduates through participation in a large collaborative research project that has links to the community. A group of UB faculty and members of the community are involved in the research with the students.

SSC 406 Law and the Environment
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies statutory and case law relating to pollution control, natural resource management, government regulation of land use, and the process and logic of decision making in governmental and legal institutions.

SSC 407 Health Care and the Elderly
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Provides students an opportunity to explore relevant issues in dealing with an elderly population in the health-care arena. Special focus on the frail elderly and aged with chronic medical conditions. Points of interest include incapacity, consents, confidentiality, ancillary and other services, rites of passage, the health-care team, managing the difficult patient, lethality assessments, family/professional relationships, health-care settings and intercultural communication.

SSC 414 Grant Writing for Non-Profits
Credits: 3
Prerequisites: ENG 102 or ENG 201 unless exempted
Corequisites: None
Type: LEC
Prepares student in human services, environmental studies, and urban and public policy for grant development. Overview of fundraising among non-profits, development of grant-writing strategies, and how to research and create grant proposals in a competitive market. Extensive proposal writing and composition. Integrated with current ongoing internships if students simultaneously pursue a practicum in Health and Human Service (SSC 496) or Environmental Internship (SSC 497). Students not pursuing a practicum or internship will adopt and research a non-profit organization appropriate to their field of study.

SSC 419 Wilderness
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Focuses on wilderness and biocentrism. Explores the idea of wilderness along three pathways. Part 1 deals with the history of biological wilderness and philosophical wilderness from Spinoza to Leopold to Snyder. Part 2 covers biological and other wilderness qualities. Part 3 examines the social movements related to wilderness and biocentrism. Also explores environmental ethics and morals. Investigates proposals for wilderness restoration, preservation, and expansion. A close examination of indigenous cultures’ wilderness beliefs accompanies our study.

SSC 420 Child Mental Health
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Examines the human service system as it affects the mental health needs of children; also addresses specific needs of special groups.

SSC 428 Legal Issues in Human Services
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Explores legal aspects of human services focusing on the constitutional right to privacy, the right to die, involuntary hospitalization and treatment of the mentally disabled, and entitlements. Covers family law, the rights of the elderly and the disabled, and laws concerned with special education.

SSC 431 Topics in Human Services Studies
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Allows students to explore up-to-date information and current debates in their chosen field. Topic titles and offerings vary from semester to semester. Students should check with the Office of Interdisciplinary Degree Programs to determine how the course may be used to fulfill major requirements.

SSC 432 Topics in Legal Studies
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Allows students to explore up-to-date information and current debates in their chosen field. Topic titles and offerings vary from semester to semester. Students should check with the Office of Interdisciplinary Degree Programs to determine how the course may be used to fulfill major requirements.

SSC 433 Topics in Environmental Studies
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Provides a comprehensive analysis of the environmental movement in the United States. Rather than focusing on whether the protection of the environment is “right” or “wrong” the course critically examines the past, present and future of the environmental movement including Conservation, Preservation, Deep Ecology, Environmental Justice, Ecofeminism and Ecotheology. The course will examine the methods used by grassroots, environmental organizations. Throughout the course what is discussed will be applied to several local environmental concerns.

SSC 434 Topics in Urban and Public Policy
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Allows students to explore up-to-date information and current debates in their chosen field. Topic titles and offerings vary from semester to semester. Students should check with the Office of Interdisciplinary Degree Programs to determine how the course may be used to fulfill major requirements.

SSC 441 Wildlife and Wildlands Management
Credits: 4
Prerequisites: SSC 118, SSC 315
Corequisites: None
Type: LEC/LAB
Wildlife and Wildlands Management will focus on the application of ecological principles to studying and managing wildlife populations with emphasis on habitat management. This course serves as an introduction to wildlife ecology and management and focuses on the wildlife of North America. The course begins with a brief examination of the history of wildlife management and wildlife policy in North America. The majority of the class will focus on important wildlife species, wildlife ecology, population biology, and other subjects of importance to wildlife management. Special problems such as endangered species preservation, genetic diversity conservation, predator management, control of nuisance and alien species, and other non-game species will be covered. We will discuss case histories and current issues of wildlife management on public and private lands. Science, of which wildlife conservation is a part, allows us to understand how living systems function. This knowledge further allows us to determine our role in maintaining healthy ecosystems. We also consider the attitudes of humans toward wildlife and their demands and impacts on North America’s wildlife resources. The lab focuses on the technical applications, outdoor components and management techniques related to the field.

SSC 442 Environmental Movements
Credits: 3
Prerequisites: none
Corequisites: none
Type: SEM
Provides a comprehensive analysis of the environmental movement in the United States. Rather than focusing on whether the protection of the environment is “right” or “wrong” the course critically examines the past, present and future of the environmental movement including Conservation, Preservation, Deep Ecology, Environmental Justice, Ecofeminism and Ecotheology. The course will examine the methods used by grassroots, environmental organizations. Throughout the course what is discussed will be applied to several local environmental concerns.
### Sociology

#### SOC 101 Introduction to Sociology
- **Credits:** 3
- **Prerequisites:** None
- **Corequisites:** None
- **Type:** LEC
- **Description:** Introduces the study of animal behavior. Explores natural behaviors and the factors affecting those behaviors by covering topics such as the evolution of behavior, the nervous and endocrine systems, biological rhythms, social systems, reproductive behavior, and more. Course participants examine and understand animal behavior through lectures, readings, short projects, and direct observation of the animal populations on zoo grounds.

#### SOC 111 Contemporary Popular Music
- **Credits:** 3
- **Prerequisites:** None
- **Corequisites:** None
- **Type:** LEC
- **Description:** Same as AMS 111. Outlines historical developments that helped formulate today's jazz and rock movements. Emphasizes roots and foundations of the forms.

#### SOC 201 Structure of American Society
- **Credits:** 3
- **Prerequisites:** None
- **Corequisites:** None
- **Type:** LEC
- **Description:** Introduces principal features and modern tendencies of patterned behavior in American society.

#### SOC 205 Sociology of Art
- **Credits:** 3
- **Prerequisites:** None
- **Corequisites:** None
- **Type:** LEC
- **Description:** Examines the relationship between the arts and society, focusing on the ways in which art reflects and influences social structures and processes. Emphasizes the intersection of art and society from a sociological perspective.

#### SOC 206 Social Problems
- **Credits:** 3
- **Prerequisites:** None
- **Corequisites:** None
- **Type:** LEC
- **Description:** Examines social problems and their social, psychological, and theoretical perspectives in the literature, and social problems as related to and distinguished from the concepts of deviance and social organization.

#### SOC 211 Sociology of Diversity
- **Credits:** 3
- **Prerequisites:** None
- **Corequisites:** None
- **Type:** LEC
- **Description:** Provides a sociological introduction to diversity in American society. Explores the bases and social implications of difference with particular reference to issues of race, ethnicity, religion, class, and gender.

#### SOC 235 Sociology of American Jews
- **Credits:** 3
- **Prerequisites:** None
- **Corequisites:** None
- **Type:** LEC
- **Description:** Introduces the sociology of American Jews. Addresses the social foundations of the Jewish cultural experience, and, specifically, the relationship between the diverse population of Jewish religious adherents in the United States and the larger American society. Pays particular attention to issues of identity, family, social institutions, educational systems, assimilation, accommodation, and community matters. Additionally, the course moves beyond a strictly sociological perspective to present a survey and overview of the issues pertinent to the Jewish experience in America.

#### SOC 238 Women, Work, and Family in the 20th Century
- **Credits:** 3
- **Prerequisites:** None
- **Corequisites:** None
- **Type:** LEC
- **Description:** Same as AMS 238. Explores the experience of women of different race, class, and ethnic groups regarding changes in women's responsibilities in the family, participation in the labor force, and the development of new family forms. The course illuminates contemporary issues regarding work, marriage, and family from a historical perspective.

#### SOC 293 Social Research Methods
- **Credits:** 3
- **Prerequisites:** None
- **Corequisites:** None
- **Type:** LEC
- **Description:** Examines the relationship between research and social problems, and provides an overview of the methods used in social research.

#### SOC 294 Basic Statistics for Social Sciences
- **Credits:** 3
- **Prerequisites:** None
- **Corequisites:** None
- **Type:** LEC
- **Description:** Provides a foundation in the mathematics underlying statistical techniques for interpreting quantitative social data.

#### SOC 304 Sociology of Aging
- **Credits:** 3
- **Prerequisites:** None
- **Corequisites:** None
- **Type:** LEC
- **Description:** Explores social and historical currents in the study of aging: physiological, social, and theoretical perspectives of gerontology; issues of daily living impinging on older persons; and the institutional and social structural consequences of demographic trends.

#### SOC 307 Criminology
- **Credits:** 3
- **Prerequisites:** None
- **Corequisites:** None
- **Type:** LEC
- **Description:** Explains patterns in the incidence and frequency of crime and delinquency based on criminological theory and research.

#### SOC 308 Sociology of the Life Course
- **Credits:** 3
- **Prerequisites:** None
- **Corequisites:** None
- **Type:** LEC
- **Description:** Introduces theories and research on socialization processes. Provides an overview of development and socialization in childhood, adolescence, and adulthood.

#### SOC 309 Introduction to Social Change
- **Credits:** 3
- **Prerequisites:** None
- **Corequisites:** None
- **Type:** LEC
- **Description:** Basic issues and forces of social and cultural changes, both historic and contemporary.

#### SOC 310 Sociology of Education
- **Credits:** 3
- **Prerequisites:** None
- **Corequisites:** None
- **Type:** LEC
- **Description:** Explores schools and colleges as social institutions in the United States and other societies.

#### SOC 313 Sociology of the Family
- **Credits:** 3
- **Prerequisites:** None
- **Corequisites:** None
- **Type:** LEC
- **Description:** Examines the family in terms of its internal structure and its relationships with major social institutions. The analysis is generally cross-cultural, specifically emphasizing the American family.

#### SOC 314 Sociology of Gender
- **Credits:** 3
- **Prerequisites:** None
- **Corequisites:** None
- **Type:** LEC
- **Description:** Examines the family in terms of its internal structure and its relationships with major social institutions. The analysis is generally cross-cultural, specifically emphasizing the American family.

#### SOC 315 Sociology of City Life
- **Credits:** 3
- **Prerequisites:** None
- **Corequisites:** None
- **Type:** LEC
- **Description:** Studies cities and metropolitan regions in terms of history, types, institutions, social organizations, ecological structure, and changes; urban problems; and city and regional planning.

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**SSC 448 Animals, Zoos, and Ecology**
- **Credits:** 3
- **Prerequisites:** None
- **Corequisites:** None
- **Type:** TUT

**SSC 479 Environmental Education Field Studies**
- **Credits:** 3
- **Prerequisites:** SSC 315
- **Corequisites:** None
- **Type:** LAB

**SSC 493 Ecology of Unique Environments**
- **Credits:** 3
- **Prerequisites:** SSC 315
- **Corequisites:** None
- **Type:** LAB

**SSC 496 Internship**
- **Credits:** 1
- **Prerequisites:** Permission of Instructor
- **Corequisites:** None
- **Type:** TUT

**SSC 499 Independent Study**
- **Credits:** 1
- **Prerequisites:** None
- **Corequisites:** None
- **Type:** TUT

Various instructors offer independent study. Check with the Office of Interdisciplinary Degree Programs each semester.
SOC 317 Criminal Justice Systems  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Studies the institutions that administer criminal law; police, prosecutor, courts, probation service, and prisons and jails. Introduces substantive and procedural criminal law as applied by those institutions.

SOC 319 Juvenile Justice  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Reviews past and current legal reactions to adolescent deviance, delinquency, and crime.

SOC 321 Race and Ethnic Relations  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Examines intergroup relations in the United States among racial, religious, nationality groups. Considers factors in the development of intergroup hostility, acculturation, assimilation, and pluralism.

SOC 322 Introduction to Medical Sociology  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Examines social epidemiology, including the influence of social conditions on health status, and the effect of social milieu on the appearance of chronic degenerative disease and mental disorders.

SOC 325 Friendship and Life Course  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Examines theories and research on social networks, small group development, and social support. Focuses on friendship across the life course.

SOC 326 Group Dynamics  
Credits: 3  
Prerequisites: permission of instructor  
Corequisites: None  
Type: SEM  
Improves the student's ability to observe, conceptualize, and explain small-group processes by analyzing events that occur in the group. Meetings are videotaped or sound-taped to aid analysis.

SOC 328 Social Stratification  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Explores systems of inequality in society, including theories of social stratification from Marx to the functionalists, forms of stratification systems, inequality in the United States, class consciousness, and class action.

SOC 329 Population Problems  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Introduces the principles and methods of demographic analysis in sociology as it is used to examine population changes and their social, political, and economic implications for human societies.

SOC 332 Sociology of Work  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Explores popular culture and mass media through their relation to social processes. Introduces the tradition of cultural studies, especially the Frankfurt School of Sociology and the Birmingham School. Further considers contemporary approaches including cultural criticism, postmodernism and semiotics. Studies media culture as institutionalized in the film, music, television, advertising and publishing industries. Analyzes the relationship between popular culture and subcultures, especially adolescent subcultures.

SOC 335 Sociology of Adolescence  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Explores social processes and the socialization of children and adolescents, including current patterns of generational conflict, generational succession as a social problem, and age gradings and the status system.

SOC 336 Sociology of Communication  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Examines patterns of communication implied by senders or inferred by receivers drawn from media. Also explores categories and rules for interpreting and creating patterns; the genesis of patterns in social science, conventional thought, practical experience, and imagination; and their effects on class, ethnic, sex, and age groupings.

SOC 337 Sociology of Punishment  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Studies the organizational emergence of legal institutions to treat, isolate, and punish the criminal offender.

SOC 338 Sociology of Sexuality  
Credits: 3  
Prerequisites: SOC 101 recommended  
Corequisites: None  
Type: LEC  
An overview of current theoretical and empirical approaches to the sociological study of sexuality. Sexuality is discussed at both the micro-level, including sexual practices and sexual identities of individuals, and at the macro-level, with a focus on how sexuality is shaped within institutions and by the historical context.

SOC 348 Urban Sociology  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Studies urban and metropolitan communities and their problems, including housing, transportation, urban renewal, race relations, poverty, and suburbanization.

SOC 349 History and Development of Sociological Theory  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Explores the development of sociological theory and the forerunners of sociological thought, including contributions of Saint-Simon and Comte, Spencer, Marx, Durkheim, Weber, and others.

SOC 351 Sociology of Religion  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Explores religious behavior as it relates to the larger social system, including American religious phenomena and its cross-cultural perspective.

SOC 355 Sociology of Developing Countries  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Introduces contemporary sociological theories; studies the historical background of and systematically analyzes sociological perspectives, such as functionalism, symbolic interaction, systems approaches, structuralism, and contemporary Marxism.

SOC 356 Sociology of Religion  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Explores religious behavior as it relates to the larger social system, including American religious phenomena and its cross-cultural perspective.

SOC 365 Sociology of Developing Countries  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Provides a theoretical and cross-societal comparative analysis of the social-structural, cultural, and motivational changes in developing countries.

SOC 368 Special Topics  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Special topics in sociology determined by individual faculty interest. Topic titles and content vary from semester to semester. Check with the department for current offerings.

SOC 370 Special Topics  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Special topics in sociology determined by individual faculty interest. Topic titles and content vary from semester to semester. Check with the department for current offerings.

SOC 371 Individual and Society  
Credits: 3  
Prerequisites: None  
Corequisites: None  
Type: LEC  
Studies the relation between the individual and society; examines major theoretical problems, such as human nature; communication and language; perception; socialization; role playing; and the interdependence of values, ideologies, and social structures.
SOC 373 Sociology of Law
Credits: 3
Prerequisites: None
Type: LEC
Introduces social science materials on the nature of law, legal institutions, the legal profession, and the impact of law on behavior. Also considers theories of law and legality, comparative legal systems, police, lawyers, judges, jury, the effect of law on behavior, and the use of social science in the courts.

SOC 375 Postmodernism and War
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Explores war as a system of organized violence. Also examines state war (external war) and class war (internal war), the military-police complex, and the polymorphic violence of contemporary society.

SOC 379 Sociology of Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines popular magazine fiction in relation to levels of taste and general values, and novels as presenting social strata. Utilizes selected scientific studies. Requires individual projects.

SOC 381 Contemporary Protest Movements
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introductory course; involves the theoretical and empirical study of reform movements.

SOC 384 Collective Behavior and Social Movements
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies the individual’s participation in, and the structure, strategies, and developments of, organized groups that attempt to change society.

SOC 390 Race, Class, and Gender in the U.S. Military
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines race, class, and gender relations in the United States armed forces. Studies the military as a social institution. With the help of sociological concepts, theories, and methods, students analyze both the internal organization and the practices of the armed forces and the relationships between the military and other institutions. Additional topics include recent Congressional hearings and military policies on race relations, women in combat, sexual harassment, sexual orientation, and quality-of-life issues.

SOC 401 : Sociology Of East Asian Families
Credits: 3
Semester: Prerequisites: SOC 101
Corequisites: None
Type: SEM
Examines families in East Asia through the lens of sociological and economic family theory. Students will have the opportunity to evaluate different theories, comparing the assumptions on which they are based and ultimately discussing which theoretical perspectives most closely fit the data available for East Asia. During the semester, we will look at topics such as marriage, cohabitation, fertility, the division of household labor, divorce, remarriage, and intergenerational transfers in the context of East Asia.

SOC 405 Sociology of Deviance
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines deviant behavior, and studies the sociological determinants of crime and delinquency, mental disorders, alcoholism, and drug addiction.

SOC 422 Senior Seminar in Medical Sociology
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Social factors play a critical role in health. Social conditions and situations not only promote the possibility of illness and disability; they also enhance prospects of disease prevention and health maintenance. Examines the social facets of health and disease, the social functions of health organizations, the social behavior of health personnel and the users of health care, and the relationship of health-care systems to other social systems.

SOC 431 Historical Sociology
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines the connection between biography, social structure and history.

SOC 440 Social Theories of Gender
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Reviews issues in critical theory, feminist theory, and postmodernism as they relate to sociology.

SOC 446 Environmental Sociology
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Examines the emerging field of environmental sociology in theoretical and substantive ways, focusing on issues of importance in all modern industrial societies. Concerns the reciprocal relationship between human societies and change within the natural environment.

SOC 464 Sociology of the Arts
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines and their relation to artists’ roles.

SOC 466 Sociology of the Arts
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines and their relation to artists’ roles.

SOC 477 Sociology of Health Care
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Explores sociological perspectives on the role of health care facilities and systems in the larger society. Topics covered include the quality and availability of health care, training and socialization of care providers, governmental versus private control, and individual rights within health care.

SOC 481 Special Topics
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Special topics in sociology determined by individual faculty interest. Topic titles and content vary from semester to semester. Check with the department for current offerings.

SOC 482 Senior Seminar: Sociology of Law
Credits: 3
Prerequisites: Completion of 64 undergraduate credit hours including a minimum of two of the following sociology courses: criminal justice systems, punishment, deviance, juvenile justice, criminology, and sociology of law, or by permission of the instructor.
Corequisites: None
Type: SEM
Covers advanced topics in deviance, juvenile justice, legal institutions, and criminology.

SOC 485 Social Change
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines class interests, agency, social movements, culture and other important issues embedded in historical and contemporary perspectives on the processes of social change. We consider such topics and their place in understanding how society changes. Our focus is on change in the United States; however, we also look at case examples from other parts of the world and discuss how globalization impacts on our understanding of the processes of social change.

SOC 492 Analysis of Social Data
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Special topics in the quantitative analysis of social data.
SOC 496 Internship Program
Credits: 1
Prerequisites: None
Corequisites: None
Type: TUT
Typically conducted in a community agency, government office, or private setting. Gives students the opportunity to observe and participate in a variety of work experiences related to sociology. Open to sociology majors with junior or senior class standing only.

SOC 497 Honors Program
Credits: 3
Prerequisites: minimum GPA of 3.25 in sociology and overall, completion of 64 credit hours, and permission of department
Corequisites: None
Type: TUT
Participation in the departmental honors program.

SOC 499 Independent Study
Credits: 1
Prerequisites: None
Corequisites: None
Type: TUT
A program of work agreed upon by the student and a faculty sponsor. Requires a faculty sponsor in the department before registering.

### Spanish

**SPA 101 Elementary Spanish 1st Semester**
Credits: 5
Prerequisites: None
Corequisites: None
Type: LEC
For students who have never had Spanish or had one year or less in high school. Reviews fundamentals of Spanish pronunciation, vocabulary, and grammar; emphasizes oral proficiency.

**SPA 102 Elementary Spanish 2nd Semester**
Credits: 5
Prerequisites: SPA 101 or permission of instructor
Corequisites: None
Type: LEC
For students who have never had Spanish or had one year or less in high school. Reviews fundamentals of Spanish pronunciation, vocabulary, and grammar; emphasizes oral proficiency.

**SPA 104 Transitional Elementary Spanish**
Credits: 5
Prerequisites: None
Corequisites: None
Type: LEC
A one-semester review course for students who have taken the Regents’ exams or have had previous experience with Spanish, but who are not yet able to go into the second year of language study. Involves all foreign language skills (listening, speaking, reading, and, to some extent, writing), emphasizing grammatical structures and vocabulary fundamentals of simple, everyday conversation.

**SPA 151 Intermediate Spanish 1st Semester**
Credits: 3
Prerequisites: SPA 102, SPA 104, or three or more years of high school Spanish
Corequisites: None
Type: LEC
Reviews grammar and pronunciation, structured around extensive conversation practice. Also involves vocabulary expansion through literary and nonliterary readings.

**SPA 152 Intermediate Spanish 2nd Semester**
Credits: 3
Prerequisites: SPA 151 or permission of instructor
Corequisites: None
Type: LEC
Reviews grammar and pronunciation, structured around extensive conversation practice. Also involves vocabulary expansion through literary and nonliterary readings.

**SPA 154 Intensive Intermediate Spanish**
Credits: 5
Prerequisites: SPA 102, SPA 104, or permission of instructor
Corequisites: None
Type: LEC
A one-semester accelerated review of grammar and pronunciation structured around extensive conversation and writing practice. Covers, in one semester, the material offered in SPA 151-SPA 152.

**SPA 171 Elementary Spanish for Heritage Speakers I**
Credits: 3
Prerequisites: open to students who have not studied in a school in which Spanish was the language of instruction
Corequisites: None
Type: LEC
Provides intensive practice in basic grammatical patterns, and encourages vocabulary expansion through reading and writing in the target language. Teaches standard Spanish to students who learned Spanish at home but have little or no formal instruction in the language. SPA 171 satisfies the proficiency requirement for general education. Students who need a fourth semester of a foreign language must continue with SPA 241.

**SPA 172 Elementary Spanish for Heritage Speakers II**
Credits: 3
Prerequisites: open to students who have not studied in a school in which Spanish was the language of instruction
Corequisites: None
Type: LEC
A one-semester accelerated review of grammar and pronunciation structured around extensive conversation and writing practice. Covers, in one semester, the material offered in SPA 151-SPA 152.

**SPA 207 Spanish Conversation and Composition**
Credits: 3
Prerequisites: SPA 152, SPA 154 or equivalent
Corequisites: None
Type: LEC
Involves oral communication and development of writing skills in Spanish, intensive conversation, and writing of themes on contemporary topics. Requires oral participation.

**SPA 216 Hispanic Civilization**
Credits: 3
Prerequisites: SPA 152 or SPA 154 or three years of high school Spanish
Corequisites: None
Type: LEC
Examines some of the major events and trends of the twentieth century that are helpful in understanding the contemporary scene, including the Mexican Revolution, the rise and fall of the Soviet Union, World Wars I and II, the Spanish Civil War, the ascent of the United States as a global power, and the phenomena of neocolonialism and dependency in developing countries. Emphasizes contemporary issues and movements (from 1972 to the present) relevant to Hispanics in the United States, the Caribbean, Mexico, Central America, Spain, and South America. Gives students the opportunity to learn how to access cultural information on the Internet. Taught in Spanish.
SPA 225 Spanish Language Through Theatre
Credits: 3
Prerequisites: SPA 152 or SPA 154 or permission of instructor
Corequisites: None
Type: LEC
Involves reading and discussion of Spanish and Spanish American plays; emphasizes improvement of oral and written expression in Spanish.

SPA 241 Spanish for Bilinguals
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Further develops reading and writing skills of heritage speakers of Spanish; covers spelling and style, grammar review, and expository writing. Satisfies fourth-semester foreign language requirement for those who have completed SPA 171-SPA 172.

SPA 301 Survey of Spanish Literature: Middle Ages to Seventeenth Century
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies the early history of Spanish literature, from its roots in Mozarabe and the oral tradition to the Golden Age of Spanish baroque drama, verse, and prose. Emphasizes the development of literature in its socio-historical context, as well as its relation to the history of the language.

SPA 302 Survey of Spanish Literature: Eighteenth Century to Present
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces the student to the major cultural trends and some important literary works of modern Spanish literature. Class lectures present general background information on the artistic movements, philosophical vogue, and historical events that have directly contributed to the course of Spanish literature of the past three centuries. We read and discuss works by such authors as Bécquer, Galdós, Pardo Bazán, Unamuno, Lorca, Cela, and Martín Gaite.

SPA 303 Romanticism and Realism in Spain
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies the romantic and antiromantic (realist) movements in nineteenth-century Spain.

SPA 304 Early Spanish American Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Covers works from the time of the encounter between Spain and the Americas, as well as from the colonial period. Study of texts emphasizes cultural and historical issues.

SPA 305 Spanish Literature of the Middle Ages
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines the literature and culture of the Spanish Middle Ages, from the origins of the language to the unification of the peninsula under the Catholic kings.

SPA 310 Introduction to Literary Criticism
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces salient features of various critical methods, including their application to novels, plays, and poetry from Peninsular Spanish and/or Spanish American literature.

SPA 311 Survey of Spanish American Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Reviews Spanish American literature from the earliest times to the present.

SPA 312 Advanced Grammar
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines grammatical categories of Spanish; provides extensive oral and written practice.

SPA 313 Advanced Composition and Conversation
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Develops advanced grammatical and writing skills through literary and nonliterary translations from English to Spanish and vice versa.

SPA 314 Advanced Writing for Native Speakers I
Credits: 3
Prerequisites: SPA 241
Corequisites: None
Type: LEC
For native speakers of Spanish; provides practice in developing and sustaining various forms of complex writing in Spanish.

SPA 315 Advanced Writing for Native Speakers II
Credits: 3
Prerequisites: SPA 315
Corequisites: None
Type: LEC
Continuation of SPA 315.

SPA 316 Spanish Literature of the Golden Age
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Golden Age of Spanish culture refers to the period stretching roughly from the end of the sixteenth to the beginning of the seventeenth centuries, a time identified by many historians and scholars today as the dawn of the modern age. Examines this “early modernity” through careful attention to the works of such authors as Miguel de Cervantes, Francisco de Quevedo, Lope de Vega, and Calderón de la Barca.

SPA 320 Contemporary Spanish American Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies the principal characteristics of contemporary Spanish American literature; centered in the analysis of poems and short stories.

SPA 321 Business Spanish
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Addresses Spanish for the business world. Topics include correspondence, commercial terminology, readings, occasional translation of articles on financial subjects, discussions of documents, business customs, and practice in practical application. Requires oral participation.

SPA 322 Spanish Culture and Civilization
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines the history, geography, art, architecture, music, cuisine, and customs of Spain.

SPA 323 Business Spanish
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies English versions of major works by Spanish American authors.
SPA 361 Spanish Literature in Translation
Credits: 3
Prerequisites: ENG 201
Corequisites: None
Type: LEC
Studies English versions of major works by Spanish authors.

SPA 382 Introduction to Second Language Acquisition Theory
Credits: 3
Prerequisites: None, although basic linguistics courses and/or language courses helpful
Corequisites: None
Type: LEC
Examines second language acquisition (SLA) from a variety of vantage points. Explores the factors that affect learning a second language (e.g., age, native language, environment, goals, and learner strategies), and outlines the succession of theories about how people acquire a second language. Students survey and share some of the relevant research literature on an SLA issue that interests them. Further, students engage in and reflect upon a practical observation or tutoring session.

SPA 383 The Folktales in Spanish Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines content, structure, and function of traditional types of the folktales; considers ramifications of other literary genres between the Middle Ages and the eighteenth century in Spain.

SPA 405 The Quijote
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces students to questions of life, literature, and art in the time of Cervantes and to the meaning these problems can have for us today. Stresses the importance of genre as a means of interpretation. Gives attention to how modern feminist studies impact the interpretation. Gives attention to how the importance of genre as a means of problems can have for us today. Stresses Cervantes and to the meaning these life, literature, and art in the time of eighteenth century in Spain.

SPA 406 Early Twentieth-Century Spanish Literature
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines historic and aesthetic backgrounds and selected readings of the works of Unamuno, Valle-Inclán, Azorín, Baroja, A. Machado, and others. Treats all literary genres (poetry, drama, novel). Gives special emphasis to the theme of Spain, its history, and its myths as they were recreated by these writers.

SPA 407 Contemporary Literature of Spain
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies main trends and analyzes some of the most significant works written in Spain after 1936. Includes all genres (poetry, novel, and drama).

SPA 408 History of Spanish Cinema
Credits: 3
Prerequisites: SPA 151; SPA 152 or the equivalent; SPA 207, SPA 208, or SPA 210 or permission of the instructor
Corequisites: None
Type: LEC
Introduces Spanish film history, including renowned directors, the current scene, and the principles of film theory. Accompanying readings deal with cinema as an integral part of Spanish cultural heritage. Class discussions are conducted in Spanish.

SPA 409 Age of Lorca
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Centered on García Lorca’s poetry and theatre, the course deals with one of the most important poetic groups in Hispanic letters and in twentieth-century European literature: the so-called Generation of 1927 (Lorca, Salinas, Guillén, Diego, Alexandre, Alberti, and Cernuda). Studies several important avant-garde movements, such as surrealism, as well as currents in the contemporary period.

SPA 411 Spanish American Novel
Credits: 3
Prerequisites: SPA 210 or SPA 310
Corequisites: None
Type: LEC
Even though many critics agree that the Spanish American novel dates back to 1816, this course focuses on novels published between 1955 and 1990. Examines representative texts of what has been termed the New Novel. Explores some of the main themes in the works (dictatorship, revolution, love, death, and writing) and looks closely at narrative technique. Writers include Allende, Cortázar, Ferré, Fuentes, García Márquez, Puig, and Rulfo.

SPA 413 Grammar: Writing and Translation
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Develops advanced grammatical and writing skills through literary and nonliterary translations from English to Spanish and vice versa.

SPA 415 Spanish American Poetry
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Reviews the poetic production of Spanish America. Emphasis on period varies. Readings may be selected from baroque and romantic poetry, modernism, the avant-garde, and contemporary poetry.

SPA 416 Spanish American Theatre
Credits: 3
Prerequisites: SPA 210 or SPA 310
Corequisites: None
Type: SEM
Students read and analyze ten plays while examining the following literary movements: realism, vanguardism, the Theatre of the Absurd, metatheatre, and postmodernism. Students use their Spanish speaking skills, as class participation is strongly encouraged.

SPA 421 Introduction to Spanish Linguistics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines modern Catalán syntax; utilizes readings in contemporary fiction and poetry. For those familiar with the grammar of another Romance language. Requires oral participation.

SPA 422 History of the Spanish Language
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Studies the evolution of Spanish from its origin as a local variety of the Latin spoken in the Iberian Peninsula to its contemporary manifestation as a web of dialects spoken in Spain and the Americas.

SPA 423 Cervantes: Novel and Drama
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Focuses on Cervantes’ dramatic and shorter prose works, including the Novelas Ejeplares, the Comedias, and the Entremeses.

SPA 424 Special Topics I
Credits: 3
Prerequisites: Junior/senior standing or permission of instructor
Corequisites: None
Type: LEC
An independent study course with variable content. Open only to students who have taken at least two courses at the 300/400 level.

SPA 451 Catalan
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines modern Catalan syntax; utilizes readings in contemporary fiction and poetry. For those familiar with the grammar of another Romance language. Requires oral participation.

SPA 452 Special Topics III
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
An independent study course with variable content. Open only to students who have taken at least two courses at the 300/400 level.

SPA 455 Spanish Phonology
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Explores the sound system of contemporary Spanish; provides theoretical and descriptive treatments.

SPA 456 Spanish Syntax
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Examines Spanish sentence structure in its relation to semantic structure.

SPA 488 Undergraduate Literature Seminar Abroad
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Examines major figures, works, and/or movements in Spanish literature; for participants in the department’s summer program at the University of Salamanca.
Speech and Hearing Sciences

CDS 151 Introduction to Speech-Language Pathology and Audiology
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Surveys the field of communication disorders and introduces the professions of speech-language pathology and audiology. Introduces the nature of communication disorders and the effects of speech-language-hearing handicaps on the lives of individuals, families, and society. An informational course for students in education, social, and health-related fields who deal with persons whose communicative behaviors are at variance with the norm.

CDS 286 Phonetics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Basic aspects of articulatory and acoustic phonetics and transcription. Recognize and describe phonetic symbols, transcribe American English using the International Phonetic Alphabet. Describe and explain the normal aspects of speech production, including basics aspects of speech anatomy and physiology, speech acoustics, suprasegmentals, phonological processes, and dialects.

CDS 288 Anatomy and Physiology of the Speech Mechanism
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Involves an anatomic presentation of the respiratory, laryngeal and supralaryngeal areas of the speech mechanism. Examines muscle and skeletal structure for each speech component. Emphasizes in-depth discussion of breathing physiology for speech, laryngeal function for phonation and supralaryngeal function for articulation and resonance. Provides an anatomic and physiologic basis for all speech and voice disorders.

CDS 289 General and Speech Acoustics
Credits: 3
Prerequisites: CDS 286 and CDS 288
Corequisites: None
Type: LEC
Basic concepts of energy, force, and tube acoustics. Acoustic characteristics of vowels and consonants with methods for analysis. Time permitting, theories of speech perception are included.

CDS 290 Audiology: Diagnosis and Management
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces etiology, diagnosis, and rehabilitation of auditory disorders.

CDS 301 Language Development in Children
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Explores the acquisition of language form and function by typical developing children. Discusses the normal development of phonology, morphology, syntax, semantics, and pragmatics from infancy through early adolescence by examining empirical data and current theoretical issues and controversies. Examines the emergence of literacy skills and the differences in acquisition between mono- and bi-(or multi-) linguistic children. Includes the impact of cultural, ethnic, gender, socioeconomic, and individual variation on children’s normal language acquisition.

CDS 302 Language Disorders in Children
Credits: 3
Prerequisites: CDS 301
Corequisites: None
Type: LEC
Studies language disorders in children, including mental retardation, language learning disabilities, and autism. Topics include assessment techniques emphasizing language sample analysis, consideration of dialect differences, and treatment techniques to facilitate generalization.

CDS 392 Phonological Disorders: Diagnosis and Management
Credits: 3
Prerequisites: CDS 286, SHS majors only
Corequisites: None
Type: LEC
Studies sound acquisition in typically developing children and atypically developing children who exhibit speech or phonological disorders. Examines the major etiologies of speech disorders and coexisting conditions correlated with phonological disorders. Case studies will introduce various aspects of a comprehensive phonological evaluation and data analyses, and current approaches to phonological remediation.

CDS 428 Neural Basis of Communication
Credits: 3
Prerequisites: senior standing in speech and hearing science; SHS majors only
Corequisites: None
Type: LEC
Examines basic concepts of neuroanatomy and neurophysiology as the foundation for understanding communication, sensory, motor and other processing problems of neurologically impaired children and adults.
CDS 487 Psychoacoustic Science

Credits: 3
Prerequisites: CDS 289
Corequisites: None
Type: LEC

Presents the acoustic science background necessary for study in speech pathology, audiology, physical acoustics, electroacoustics, speech acoustics, psychoacoustics, psychology, and hearing science.

CDS 491 Special Topics

Credits: 3
Prerequisites: SHS majors only
Corequisites: None
Type: SEM

Content varies each semester.

CDS 493 Honors Research Seminar

Credits: 3
Prerequisites: Permission by petition
Corequisites: None
Type: TUT

Students admitted to the Early Admission Program (early admission to the graduate program in CDS at UB) participate in tutorials from individual academic and clinical faculty members in the department covering research and clinical methods in speech, language, and hearing abilities and disorders. Readings are pertinent to each topic, and students complete a paper or project with a faculty member in an area of interest.

CDS 497 Departmental Honors Thesis or Project

Credits: 3
Prerequisites: Acceptance into the departmental honors program and permission of instructor
Corequisites: None
Type: TUT

Accepted seniors pursue a specialized, independent study leading to an honors thesis or project.

CDS 498 Undergraduate Research and Creative Activity

Credits: 1
Prerequisites: None
Corequisites: None
Type: TUT

Students collaborate with faculty research mentors on an ongoing project in a faculty member's laboratory or conduct independent research under the guidance of a faculty member. This experience provides students with an inquiry-based learning opportunity and engages them as active learners in a research setting.

CDS 499 Independent Study

Credits: 1
Prerequisites: Permission by petition
Corequisites: None
Type: TUT

Individualized student work under the guidance of a faculty member, intended to pursue topics that are not currently offered through regular coursework at the university.

Theatre

TH 101 Introduction to Theatre

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

TH 103 Introduction to Drama

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Introduces reading a play as an imaging of action. Exploration of structuring plot, character, and other elements of a play. Compares texts with interpretations in live and video productions. Required for all majors and minors.

TH 105 Introduction to Theatre—Non majors

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Central theatrical and literary elements of dramatic art; readings in selected plays and criticism. Students attend several productions. For nonmajors.

TH 106 Introduction to Technical Theatre

Credits: 3
Prerequisites: None
Corequisites: TH 135 or TH 136
Type: LEC

Production elements: materials, equipment and construction of scenery, costumes, lighting and sound; production organization: run crews, stage management. Required of all majors.

TH 107 Costume Construction I

Credits: 3
Prerequisites: TH 106
Corequisites: None
Type: LEC/LAB

Introduces materials, tools, and techniques; may include patterning, fabric identification, dyeing, and painting; projects on departmental productions.

TH 108 Basic Acting I

Credits: 3
Prerequisites: freshman/sophomore standing or permission of instructor
Corequisites: None
Type: LAB

TH 109 Basic Acting II

Credits: 3
Prerequisites: TH 101, TH 106, TH 108, permission of instructor
Corequisites: None
Type: LAB

Introduces scene study: how to break down a script; how to prepare an actor's score; primary terms; a precise and exacting rehearsal method; how to make fundamental character choices; how to uncover the character's dramatic intentions. Emphasizes working together, sharing space, and playing objectives. Students must be willing to explore their emotional life as a means to living truthfully on stage.

TH 126 Topics in Arts and Culture

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Central theatrical and literary elements of dramatic art; readings in selected plays and criticism. Students attend several productions. For nonmajors.

TH 135 Production Practicum

Credits: 1
Prerequisites: None
Corequisites: TH 106
Type: LAB

Practical experience on productions based on lectures in TH 106.

TH 136 Production Practicum

Credits: 1
Prerequisites: None
Corequisites: TH 106
Type: LAB

Practical experience on productions based on lectures in TH 106.

TH 203 Visual Imagination

Credits: 3
Prerequisites: TH 101 or TH 105; TH 106
Corequisites: None
Type: LEC

Nature and elements of behavior-based acting; practical investigation and involvement; physical games; imaginative exercises; improvisations; preliminary introduction to scene work. Required of all majors and minors.

TH 205 Technical Drafting

Credits: 3
Prerequisites: TH 106
Corequisites: None
Type: LEC

Transfer of designer's ideas to ground plans and working drawings.

TH 207 Stage Makeup

Credits: 3
Prerequisites: TH 203 and permission of instructor
Corequisites: None
Type: LEC

Analysis, research, and design as essential elements in realizing makeup for a character; explores basic materials and techniques.

TH 208 Method Acting I

Credits: 3
Prerequisites: TH 109, permission of instructor
Corequisites: None
Type: LEC

The study and practice of the Strasberg Method of relaxation and sensory exercises and its application to an actor in scene work and monologues. Concentrates on exercises that constitute Lee Strasberg's Method as well as scene and monologue work.

TH 209 Method Acting II

Credits: 3
Prerequisites: TH 208, TH 301, permission of instructor
Corequisites: None
Type: LEC

Continues principles and techniques studied in TH 208. Advanced acting exercises based on the method developed by the late Lee Strasberg. Further develops exploration and application of advanced scene analysis, affective memory, and additional tools to scene-work. Advanced research on method acting, focusing on Lee Strasberg, Stella Adler, Robert Lewis, and Sanford Meisner.

TH 210 Audition Workshop (Non-BFA)

Credits: 3
Prerequisites: THD 109
Corequisites: None
Type: SEM

Studio/performance course focusing on three basic skills: scene analysis, "cold" readings, and monologue preparation. Students refine their ability to breakdown and analyze scripts and further develop their audition technique. These skills will be applied to the preparation and presentation of monologues and scenes from modern American and European plays, both realistic and nonrealistic, from the late 1980s and on. Requires all students be prepared and flexible, able to bring something new to each class and willing to adapt to direction and try new approaches to audition material.

TH 226 Anis Mooring

Credits: 3
Prerequisites: TH 109 or permission of instructor
Corequisites: None
Type: TUT

Anis Mooring's method of voice training; how to use the voice in speaking. Students learn how to apply the principles of his method to stage and screen performance.

TH 227 Voice Training I

Credits: 3
Prerequisites: TH 109 or permission of instructor
Corequisites: None
Type: TUT

Exercises to consciously relax body tension, align the body, and deepen the awareness of breathing. Text work, such as Haiku poetry, connects words to breathing.
TH 228 Voice Training II
Credits: 3
Prerequisites: TH 227 or permission of instructor
Corequisites: None
Type: SEM
Continuation of TH 227; focuses on the development of vocal range, power, capacity, flexibility, and sensitivity. Text work— including poetry, monologues, sonnets, and scene work, along with exercises—continues the breathing/word connection.

TH 230 Theatre Crafts
Credits: 3
Prerequisites: TH 101, TH 106, TH 108
Corequisites: None
Type: LEC
Research, materials, and techniques of properties for scenery and costume construction. May include paints and finishes, casting and sculpting, sewing, leatherwork, upholstery, fabric dyeing, painting techniques, and millinery and wigs.

TH 235 Production Practicum
Credits: 1
Prerequisites: TH 101, TH 106, TH 108
Corequisites: None
Type: LAB
Practical run crew experience on productions.

TH 236 Production Practicum
Credits: 1
Prerequisites: TH 101, TH 106, TH 108
Corequisites: None
Type: LAB
Practical run crew experience on departmental productions.

TH 301 Theatre History and Literature I
Credits: 3
Prerequisites: TH 101, TH 106, TH 108
Corequisites: None
Type: LEC
Early theatrical rituals: European theatre from antiquity (Greece and Rome), through the middle ages and Renaissance (including English Elizabethan theatre and Spanish Golden Age theatre), to seventeenth-century Baroque theatre in Italy and France, and Oriental theatre (India, China, Japan, Indonesia). Combines the study of theatre forms with reading and analyzing dramas. Required of all majors. Should be taken sophomore year.

TH 302 Theatre History and Literature II
Credits: 3
Prerequisites: TH 301 or permission of instructor
Corequisites: None
Type: LEC
Combines the study of theatre forms with reading and analyzing dramas. Required of all majors. Should be taken sophomore year.

TH 303 Scene Design I
Credits: 3
Prerequisites: TH 203
Corequisites: None
Type: LEC
Analysis, research, style as translation from text to image; visual communication through spacial arrangement as it applies to theatre. Tools and techniques of presentation: ground plans, models, etc.

TH 305 Costume Drafting and Draping
Credits: 3
Prerequisites: TH 107, TH 203 or permission of instructor
Corequisites: None
Type: LEC/LAB
Basic techniques of pattern development for stage costume; projects in patternmaking from designer's sketches.

TH 306 Costume Design I
Credits: 3
Prerequisites: TH 203
Corequisites: None
Type: LEC
Analysis, research, style as translation from text to image; visual communication of character through clothes. Tools and techniques of presentation: organization, etc.; minimal drawing.

TH 308 Poetic Text
Credits: 3
Prerequisites: TH 203, TH 209, TH 227, TH 302, major or minor, permission of instructor
Corequisites: None
Type: SEM
Actors' use of language, especially poetic and heightened language. Material is selected from a progression of styles beginning with naturalism and evolving to classical poetic texts. Stresses techniques of imaging, textual analysis, and full use of breath and voice to support the demands of non-naturalistic language.

TH 309 Mime/Movement for Actors
Credits: 3
Prerequisites: TH 228, TH 308 or permission of instructor
Corequisites: None
Type: SEM
Involves the actor's use of specific techniques as a tool to add awareness, flexibility, and suppleness to body movement so that the actor becomes free to concentrate on creating a role. This intensive training leads to a more elaborate physical building of the character, which unites the actor's body and mind with the script.

TH 314 Introduction to Dramaturgy
Credits: 3
Prerequisites: TH 101, TH 108, Theatre Major, or permission of instructor
Corequisites: None
Type: SEM
The dramaturg is an important collaborator in the theatrical production process, playing the multi-faceted role of historian, researcher, adaptor, translator, audience educator, and overall supporter of the production team. Working closely with the director, the dramaturg helps to shape and nourish the production and facilitates the demanding process of bringing a play from the page to the stage. Introduced students to the fundamentals of production dramaturgy through close analysis of works by select playwrights of the contemporary historical theatre.

TH 315 Modern Theatre I
Credits: 3
Prerequisites: TH 302, junior/senior or permission of instructor
Corequisites: None
Type: LEC
Deals in some detail with the development of a dominant realistic tradition in the theatre at the end of the nineteenth century and then examines the modification of that tradition because of the attacks that set in almost at once. Emphasizes understanding individual plays, together with some appreciation of relevant developments in acting and scenic design. Figures include Zola, Ibsen, Strindberg, Hauptmann, Maeterlink, Jarry, Chekhov, Synge, Kokoschka, Wedekind, Cocteau, as well as Antoine, Stanislavsky, and Lugne-Poe.

TH 316 Modern Theatre II
Credits: 3
Prerequisites: TH 302, junior/senior or permission of instructor
Corequisites: None
Type: LEC
Significant developments in theatre art and play writing since World War I; selected readings in British and continental plays and criticism.

TH 320 American Drama
Credits: 3
Prerequisites: TH 302, junior/senior or permission of instructor
Corequisites: None
Type: LEC
Explores the contemporary American drama and theatre, especially emphasizing the plays of Arthur Miller, Tennessee Williams, William Inge, Clifford Odets, Sam Shepard, David Mamet, and the emerging playwrights of the '60s and early '90s.

TH 325 Performance and the Critic
Credits: 3
Prerequisites: TH 302, junior/senior or permission of instructor
Corequisites: None
Type: SEM
Surveys the performing arts (theatre, dance, music, etc.) to increase background knowledge and develop critical awareness. Reading includes criticism, material on the performing arts, and texts of plays. Students attend live performances and write critiques. Discussion of performances and assigned reading; guest speakers; screening of films and videotapes; workshops on critique writing.

TH 331 Problems in Technical Theatre
Credits: 3
Prerequisites: TH 203, TH 205 or permission of instructor
Corequisites: None
Type: LEC
Techniques employed in resolving problems in technical theatre. Requires lab work.

TH 332 Lighting Design I
Credits: 3
Prerequisites: TH 203 or permission of instructor
Corequisites: None
Type: LEC
Equipment, materials, methods of lighting the stage. Requires crew work. Should be taken sophomore year.

TH 335 Production Practicum
Credits: 1
Prerequisites: TH 101, TH 106
Corequisites: None
Type: LAB
Practical experience building departmental productions.

TH 336 Production Practicum
Credits: 1
Prerequisites: TH 101, TH 106
Corequisites: None
Type: LAB
Practical experience building productions.
Credits: 1
Prerequisites: TH 203, TH 207, majors or permission of instructor
Corequisites: None
Type: LAB
Significant participation in the performance, design, technical, and management phases of departmental productions. Credit hours for a specific project must be arranged with instructor.

TH 341 Theatre Studio I
Credits: 1
Prerequisites: audition or permission of instructor
Corequisites: None
Type: LAB
Significant participation in the performance, design, technical, and management phases of departmental productions. Credit hours for a specific project must be arranged with instructor.

TH 342 Theatre Studio II
Credits: 1
Prerequisites: audition or permission of instructor
Corequisites: None
Type: LAB
Significant participation in the performance, design, technical, and management phases of departmental productions. Credit hours for a specific project must be arranged with instructor.

TH 343 Theatre Studio III
Credits: 1
Prerequisites: audition or permission of instructor
Corequisites: None
Type: LAB
Significant participation in the performance, design, technical, and management phases of departmental productions. Credit hours for a specific project must be arranged with instructor.

TH 344 Theatre Studio IV
Credits: 1
Prerequisites: audition or permission of instructor
Corequisites: None
Type: LAB
Significant participation in the performance, design, technical, and management phases of departmental productions. Credit hours for a specific project must be arranged with instructor.

TH 345 Costume Construction Studio
Credits: 1
Prerequisites: department majors or permission of instructor
Corequisites: None
Type: LAB
Significant participation in the performance, design, technical, and management phases of departmental productions. Credit hours for a specific project must be arranged with instructor.

TH 346 Costume Design Studio
Credits: 1
Prerequisites: department majors or permission of instructor
Corequisites: None
Type: LAB
Significant participation in the performance, design, technical, and management phases of departmental productions. Credit hours for a specific project must be arranged with instructor.

TH 347 Scene Design Studio
Credits: 1
Prerequisites: department majors or permission of instructor
Corequisites: None
Type: LAB
Significant participation in the performance, design, technical, and management phases of departmental productions. Credit hours for a specific project must be arranged with instructor.

TH 348 Lighting Design Studio
Credits: 1
Prerequisites: department majors or permission of instructor
Corequisites: None
Type: LAB
Significant participation in the performance, design, technical, and management phases of departmental productions. Credit hours for a specific project must be arranged with instructor.

TH 349 Technical Studio
Credits: 1
Prerequisites: department majors or permission of instructor
Corequisites: None
Type: LAB
Significant participation in the performance, design, technical, and management phases of departmental productions. Credit hours for a specific project must be arranged with instructor.

TH 350 Properties Studio
Credits: 1
Prerequisites: department majors or permission of instructor
Corequisites: None
Type: LAB
Significant participation in the performance, design, technical, and management phases of departmental productions. Credit hours for a specific project must be arranged with instructor.

TH 370 Age of Shakespeare
Credits: 3
Prerequisites: TH 302, junior/seniors, or permission of instructor
Corequisites: None
Type: LEC
Dramatic works of Shakespeare’s contemporaries-Chrissopher Marlowe, Ben Jonson, and others; theatre and theatrical practices of the period.

TH 401 Directing I
Credits: 3
Prerequisites: TH 101 or permission of instructor
Corequisites: None
Type: SEM
A practical course in directing. Provides students with the consciousness of theatre and creative directing: basic techniques in preparing the script for rehearsals, creating the space, collaborating with a designer, using tempo/rhythm, working with actors, preparing and conducting rehearsals.

TH 402 Directing II
Credits: 3
Prerequisites: TH 401 or permission of instructor
Corequisites: None
Type: SEM
Continuation of TH 401. Includes work on a play, script, or other material for a production: analyzing text, preparing lists of characters, settings, props, and music/sound effects. Creating a space: its character, dimensions, relationships between actors and audience, the role of light, use of objects within space, and shape of the space for the spectator. Explores the speed/tempo/rhythm of a production. Methods of casting, auditioning, rehearsing; methods of collaborating with authors, translators, literary advisors, designers, composers, stage managers, technical staff, and administrative staff.

TH 403 Scene Design 2
Credits: 3
Prerequisites: TH 303 or permission of instructor
Corequisites: None
Type: LEC
Further studies in scene design; individual projects.

TH 404 Scene Design 3
Credits: 4
Prerequisites: None
Corequisites: None
Type: SEM
The scene designer’s process is exercised by creating production proposals for significant theatrical works. Particular attention is given to text analysis, research methods, visual communication, three-dimensional response, and presentation. The course culminates in a portfolio review where the student will demonstrate his/her ability to create innovative and appropriate scenic environments for given texts in diverse venues.

TH 406 Costume Design II
Credits: 3
Prerequisites: TH 306 or permission of instructor
Corequisites: None
Type: SEM
Further studies in costume design.

TH 408 Audition Techniques
Credits: 3
Prerequisites: TH 309 or permission of instructor
Corequisites: None
Type: SEM
Techniques and methods of preparation essential for successful auditions at the college, graduate school, and professional levels.

TH 409 Acting in Shakespeare
Credits: 3
Prerequisites: TH 408 or permission of instructor
Corequisites: None
Type: SEM
Deciphers rhythm and image codes in Shakespearean verse and incorporation of these elements into scene and character preparation. General social, historical, and theatrical orientation to Elizabethan England. Examines at least one tragedy and one comedy.

TH 411 Theatre Workshop
Credits: 1
Prerequisites: TH 109 or permission of instructor
Corequisites: None
Type: LAB
Historical, artistic, practical aspects of a specific play or dramatic problem (audition), works of a specific playwright. Workshop performance produced entirely with the resources of class members.

TH 412 Theatre Workshop
Credits: 1
Prerequisites: TH 302, junior/senior or permission of instructor
Corequisites: None
Type: LAB
Historical, artistic, practical aspects of a specific play or dramatic problem (audition), works of a specific playwright. Workshop performance produced entirely with the resources of class members.

TH 413 Theatre Workshop
Credits: 1
Prerequisites: TH 302, junior/senior or permission of instructor
Corequisites: None
Type: LAB
Historical, artistic, practical aspects of a specific play or dramatic problem (audition), works of a specific playwright. Workshop performance produced entirely with the resources of class members.

TH 414 Theatre Workshop
Credits: 1
Prerequisites: TH 109 or permission of instructor, sophomore/junior status
Corequisites: None
Type: LAB
Historical, artistic, practical aspects of a specific play or dramatic problem (audition), works of a specific playwright. Workshop performance produced entirely with the resources of class members.
TH 416 Mask
Credits: 3
Prerequisites: TH 109, TH 203 or permission of instructor
Corequisites: None
Type: SEM
Studies mask traditions and practical exploration of mask technique, using neutral masks, full-face masks and half-masks. Develops skill in using sound, gesture and movement to create mask characters. Creating and performing solo or ensemble scenes, using mask characters.

TH 418 Theatrical Clowning
Credits: 3
Prerequisites: TH 109, TH 203 or permission of instructor
Corequisites: None
Type: LEC
The history of clowning in Western theatre, with some reference to non-Western cultures. Students learn clowning techniques—charter work, transformation of objects, slapstick, and simple acrobatics. Each student develops an individual clown character and presents that character in performance before an audience.

TH 422 History of Theatre Space and Architecture Seminar
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Review of history of theatre space and architecture from the origins of theatre in ancient Greece to the present times. The review focuses on Western culture but also includes theatres all over the world.

TH 423 Advanced Acting: Special Topics
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Particular techniques or methods of acting, focusing on the work of a major theoretician, practitioner or teacher of acting, such as Stanislavski, Michael Chekhov, Sanford Meisner, or Lee Strasberg. Builds on previous work in the core acting sequence. LEC

TH 424 Advanced Acting: Special Topics
Credits: 3
Prerequisites: TH 209, permission of instructor
Corequisites: None
Type: SEM
Particular techniques or methods of acting, focusing on the work of a major theoretician, practitioner or teacher of acting, such as Stanislavski, Michael Chekhov, Sanford Meisner, or Lee Strasberg. Builds on previous work in the core acting sequence.

TH 427 Voice and Movement
Credits: 3
Prerequisites: TH 228, permission of instructor
Corequisites: None
Type: LEC
Explores the connection between voice, movement and language. Students learn to release habitual patterns of tension, to use their voices and bodies more spontaneously and expressively, and to communicate more effectively through sound, gesture and movement.

TH 433 Lighting Design
Credits: 3
Prerequisites: department majors, permission of instructor
Corequisites: None
Type: SEM
Intensive study of a particular movement, designer, problem, or area in theatrical design or technology.

TH 439 Studies in Design
Credits: 3
Prerequisites: department majors, permission of instructor
Corequisites: None
Type: LAB
Intensive study of a particular movement, designer, problem, or area in theatrical design or technology.

TH 440 Studies in Design
Credits: 3
Prerequisites: department majors, permission of instructor
Corequisites: None
Type: LEC
Intensive study of a particular movement, designer, problem, or area in theatrical design or technology.

TH 457 Comedy of Manners
Credits: 3
Prerequisites: TH 30, junior/senior or permission of instructor
Corequisites: None
Type: SEM
Comprehensively studies Henrik Ibsen's major works, particularly emphasizing the importance of Chekhov's collaboration with the director of the production to fulfill basic requirements and needs as that arise throughout the rehearsal and final production periods.

TH 464 Black Theatre-Past and Present
Credits: 3
Prerequisites: TH 302, junior/senior or permission of instructor
Corequisites: None
Type: SEM
Surveys the roots and development of Black Theatre from its mythic traditions in Africa to the contemporary works of Ed Bullins, Amiri Baraka and August Wilson.

TH 466 Women in Theatre
Credits: 3
Prerequisites: TH 302, junior/senior or permission of instructor
Corequisites: None
Type: SEM
Studies works of women in theatre from Krotsvitha of Gandersheim to present-day women playwrights, actors, directors and designers.

TH 468 Sources of Modern Theatre
Credits: 3
Prerequisites: TH 302, junior/senior or permission of instructor
Corequisites: None
Type: LEC
Examines, in-depth, selected figures, movements, artists, and events that have had a seminal influence on modern theatre's development. Focuses on reading important texts, discussion, and individual research, but may include workshop activities when appropriate.

TH 477 Production Dramaturgy
Credits: 1
Prerequisites: None
Corequisites: None
Type: SEM
The dramaturg is a major collaborator in the process of theatrical production, serving as both historical and critical researcher as well as a 'third eye' within the rehearsal space. This course is designed for students who wish to participate as dramaturgs on select departmental productions throughout the season. The role of the dramaturg is to work closely with the director of the production to fulfill basic requirements and needs as that arise throughout the rehearsal and final production periods.

TH 479 Brecht
Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Comprehensively studies Anton Chekhov's major works and the contribution they make to theatrical realism's development as we know it today. Also studies the importance of Chekhov's collaborations with Konstantine Stanislavsky to the birth of realistic theatre production.

TH 480 Shakespeare on Stage
Credits: 3
Prerequisites: TH 302, junior/senior or permission of instructor
Corequisites: None
Type: SEM
A study of the plays, poetry and theatre aesthetics of Brecht, and the impact of that work on 20th Cent. Drama.

TH 481 Irish Dramatists
Credits: 3
Prerequisites: TH 302, junior/senior or permission of instructor
Corequisites: None
Type: SEM
Traditional, classical and contemporary plays from Cosgrove to Beckett and Friel. Explores common themes of identity, nationalism and revolt, particularly emphasizing the tradition of tragic-comedy in the work of Irish playwrights.

TH 482 Chekhov
Credits: 3
Prerequisites: TH 302, junior/senior or permission of instructor
Corequisites: None
Type: SEM
Comprehensively studies Anton Chekhov's major works and the contribution they make to theatrical realism's development as we know it today. Also studies the importance of Chekhov's collaborations with Konstantine Stanislavsky to the birth of realistic theatre production.

TH 483 Ibsen
Credits: 3
Prerequisites: TH 302, junior/senior or permission of instructor
Corequisites: None
Type: SEM
Comprehensively studies Henrik Ibsen's major works, particularly emphasizing A Doll's House, The Wild Duck, Ghosts' and An Enemy of the People and the contribution these plays made to the birth of realistic drama.
TH 484 Theatre of Molière

Credits: 3
Prerequisites: TH 302, junior/senior or permission of instructor
Corequisites: None
Type: SEM
Explores the comic genius of Molière, both by studying his roots in the Commedia Dell’Arte and through carefully reading his major works: The Misanthrope, The Miser, Tartuffe and the Would-be Gentleman (in translation).

TH 485 Playwriting Workshop

Credits: 3
Prerequisites: TH 101, TH 108 or TH 203 or permission of instructor
Corequisites: None
Type: SEM
Explores basic tools of the playwright’s craft; writing exercises to release imagination and spontaneity; guided development of characters, dialogue, scenes, plot structure; writing a ten-minute or short one-act play, which receives a staged reading at the end of the semester. Analyzes published plays and professional productions. May be repeated for credit.

TH 486 Playwriting Seminar

Credits: 3
Prerequisites: TH 485 or permission of instructor
Corequisites: None
Type: SEM
Continuation of TH 485, for advanced students. Writing a full-length one-act play, which receives a staged reading at the end of the semester. Analyzes published plays and professional productions. May be repeated for credit.

TH 487 Major Figures

Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Major dramatists or theatre artists; variable subjects.

TH 488 Major Figures

Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Major dramatists or theatre artists; variable subjects.

TH 489 Major Figures

Credits: 3
Prerequisites: None
Corequisites: None
Type: SEM
Major dramatists or theatre artists; variable subjects.

TH 493 Advanced Directing

Credits: 3
Prerequisites: TH 402 or permission of instructor
Corequisites: None
Type: LAB
Continuation of TH 402, for advanced students.

TH 496 Art Management Internship

Credits: 1
Prerequisites: None
Corequisites: None
Type: TUT
Practical, hands-on experience. Includes work in the areas of promotion, public relations, theatre management, box office, ushering, etc.

TH 499 Independent Study

Credits: 3
Prerequisites: department majors, permission of instructor
Corequisites: None
Type: SEM
Substantial independent research or applied project under the supervision of a faculty member.

Undergraduate Education

UE 141 Discovery Seminar Program

Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC
UB’s Discovery Seminar Program offers a small class experience for students, providing them with the opportunity to engage with a distinguished faculty member in a congenial, academic setting. Seminars will focus on current disciplinary or interdisciplinary topics in the faculty member’s field. This program seeks to introduce students to the exciting intellectual atmosphere of UB, helping them to explore areas of interest and broaden their academic horizons. Intended for freshman and sophomores only. A maximum of 6 Discovery Seminar credit hours can apply toward graduation.

UE 142 Academy Seminar

Credits: 2
Prerequisites: Permission of instructor
Corequisites: None
Type: SEM
Intended for faculty member in a congenial, academic setting to engage with a distinguished faculty member and an undergraduate peer mentor collaboratively teach the course.

UB 101 for first-year students only. Students who are not in their first semester will be deregistered from the course. The repeat policy does not apply to this course.

UBE 102 Dynamics of Leadership

Credits: 2
Prerequisites: None
Corequisites: None
Type: SEM
For a student at the beginning of his/her leadership journey. Presents the fundamentals of leadership while allowing time for self awareness and discovery. Explores and defines different aspects of leadership, leaders on campus, and leadership in action, while making it clear that leadership is not just a position. Designed to develop leaders through an interactive group experience and require each student to be an active participant.

UBE 110 Introduction to Peer Education

Credits: 2
Prerequisites: None
Corequisites: None
Type: SEM
Prepares students for a peer education experience. Provides the skills necessary to play a role as a peer educator, a resident advisor, or a leader of a club or organization.

UBE 202 Career Planning

Credits: 3
Prerequisites: permission of instructor
Corequisites: None
Type: LEC
Assists students in examining their career choice. Focuses on career awareness, personal awareness, and educational awareness as they relate to the process of making a career decision. Discusses planning skills and self-assessment instruments that help identify tentative career options. Also explores decision-making strategies, resume/cover letter writing, interviewing skills, and job-search strategies.
UBE 495 Undergraduate Supervised Teaching

Credits: 2
Prerequisites: None
Corequisites: None
Type: TUT

Students serve as undergraduate teaching assistants in one of the following courses: UBE 101 University Experience or UBE 202 Career Planning.

Responsibilities for UBE 101 TAs (peer mentors) include serving as role models and sources of support to new students enrolled in UB 101, helping to ease their transition to UB. Peer Mentors share their experiences as successful students, and they work in collaboration with a UB 101 instructor, assisting with class participation and facilitating class discussions.

Responsibilities for UBE 202 TAs include aiding the primary instructor and the students, and sharing their developing knowledge of the Career Services office.

UBE 496 Internship/Practicum

Credits: 1
Prerequisites: Variable (set by instructor)
Corequisites: None
Type: LAB

Prerequisites: Variable (set by instructor)
Corequisites: None
Type: LAB

Prerequisites: Variable (set by instructor)
Corequisites: None
Type: LAB

UBE 499 Independent Study

Credits: 1
Prerequisites: permission of instructor
Corequisites: None
Type: TUT

Offers students unique educational experiences not covered by existing formal courses.

Visual Studies

VS 150 Visual Theory, Aesthetics, and Criticism

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Introduces and explores visual, aesthetic, and critical theory, and the social and cultural dynamics that inform and influence contemporary art making. Required for first-year B.F.A. and B.A. Art Program majors. Lab fee. LEC/REC

VS 152 Introduction to Visual Studies

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC

Introduces a critical knowledge and understanding of images and image systems, their history, and their intersection with the culture as a whole.

VS 200 Visual Studies Speakers Series

Credits: 1
Prerequisites: None
Corequisites: None
Type: LEC/DIS

A visiting lecture series of visual arts professionals practicing in the fields of visual art, design, multi-media, cultural theory, and criticism. Exposes students to a wide range of viewpoints, art practice, and contemporary theory. Speakers change each semester. Lab fee.

VS 220 Topics in Visual Studies

Credits: 3
Prerequisites: VS 150
Corequisites: None
Type: LEC

A course that explores different aspects of visual culture, which focuses on a different subject each semester that it is offered. Explores both the visual qualities and the critical analysis of a particular aspect of current and historical visual study.

VS 260 Visual Theory, Aesthetics and Criticism 2

Credits: 3
Prerequisites: VS 150
Corequisites: None
Type: LEC

Examines visual theory, aesthetic philosophy, and critical theory and their application to and effects on visual art of the 20th and 21st centuries. Provides a broad understanding of Modern and Postmodern thought based upon a carefully considered exposure to a set of representative primary texts. Lab fee.

VS 300 Topics in Visual Studies

Credits: 3
Prerequisites: VS 150
Corequisites: None
Type: SEM

A course that explores different aspects of visual culture, which focuses on a different subject each semester that it is offered. Explores both the visual qualities and the critical analysis of a particular aspect of current and historical visual study.

VS 375 Science, Culture, and Emerging Media

Credits: 3
Prerequisites: VS 150
Corequisites: None
Type: LEC

Introduces critical issues in science, culture, and emerging media—especially as they pertain to contemporary artistic practice. Topics are addressed through artists’ works; selected readings include historical trends, biotechnology, virtuality, net theory, and cultural resistance. Lab fee.

VS 400 Topics in Visual Studies

Credits: 3
Prerequisites: VS 150
Corequisites: None
Type: SEM

A course that explores different aspects of visual culture, which focuses on a different subject each semester that it is offered. Explores both the visual qualities and the critical analysis of a particular aspect of current and historical visual study.

VS 415 Special Topics

Credits: 3
Prerequisites: None
Corequisites: None
Type: LAB

Topics vary by semester.

VS 425 Designed Play

Credits: 3
Prerequisites: ART 348
Corequisites: None
Type: LAB

Provides the student with a critical examination of how the medium of photography has been philosophically problematized by poststructuralist theory, focusing upon visual culture and visual art. Lectures and directed reading provide the basis for discussion.

VS 427 Photographic Practice

Credits: 3
Prerequisites: ART 250 or DMS 419, DMS 151, DMS 420 or Permission Instructor.
Corequisites: None
Type: SEM

Focuses on the changing role of “play” and its impact on contemporary cultural production. Investigates the following topics: how we currently define play - is it amnesial, productive, meaningful; production of “play” and use of game-based models in consumer, educational and corporate culture; shifting boundaries between work and leisure. Integrates studio assignments with theoretical research and analysis from a broad range of platforms including: digital and non-digital gaming, virtual worlds, public space and situated technologies, interactive and environmental design.

VS 449 Topics in Contemporary Photography

Credits: 3
Prerequisites: ART 348
Corequisites: None
Type: SEM

Combines lecture, readings, and class discussion in examining major issues in contemporary photography. Theoretical, critical, and historical topics vary each semester. Lab fee.

VS 473 Performative Action

Credits: 3
Prerequisites: None
Corequisites: None
Type: LAB

Graduate and advanced undergraduate course on the theories and practice of performance and performativity in relation to the body in art. Integral to the curriculum are two visiting artist lecture/ workshops on related topics. Explores issues such as audience interaction, site-specificity, public/private space, cultural and gender identity, technology, ritual, and the sensorial. Lab fee.

VS 479 The Revolutionary Sublime

Credits: 3
Prerequisites: None
Corequisites: None
Type: LAB

An advanced undergraduate seminar. Investigates the visual art that arose from revolutionary tensions between theory and everyday life in key European and American political upheavals.

VS 480 Visual Culture Seminar: Discourse and Deconstruction

Credits: 3
Prerequisites: ART/VS 150
Corequisites: None
Type: SEM

Provides the student with a critical examination of how the medium of photography has been philosophically problematized by poststructuralist theory, focusing upon visual culture and visual art. Lectures and directed reading provide the basis for discussion.

VS 487 Visual Culture Seminar: Vision, Space, and Power

Credits: 3
Prerequisites: VS 150
Corequisites: None
Type: SEM

Students consider the issues surrounding how we visually conceptualize both space and gender and how they are interrelated, focusing upon visual culture and visual art. Lectures and directed reading provide the basis for discussion.
World Languages

IRI 191 Irish Gaelic First Year—First Semester

Credits: 3
Prerequisites: None
Corequisites: None
Type: LAB
Teaches basic speaking, listening comprehension, reading and writing skills in Modern Irish Gaelic. Gives students a good command of basic grammatical constructions and common expressions used in daily life, along with introductory knowledge about Irish culture. IRI 191 is for true beginners, or students whose exposure to Irish is limited.

IRI 192 Irish Gaelic First Year—Second Semester

Credits: 3
Prerequisites: IRI 191 or equivalent
Corequisites: None
Type: LAB
Continuation of IRI 191. Reviews both basic and complex grammatical and pronunciation patterns, and provides intensive vocabulary expansion through a variety of readings as well as conversation and writing practice.

HIN 191 Hindi First Year—First Semester

Credits: 3
Prerequisites: None
Corequisites: None
Type: LAB
Teaches basic speaking, listening comprehension, reading and writing skills in Hindi. Gives students a good command of basic grammatical constructions and common expressions used in daily life, along with introductory knowledge about Indian culture. HIN 191 is for true beginners, or students whose exposure to Hindi is limited.

HIN 192 Hindi First Year—Second Semester

Credits: 3
Prerequisites: HIN 191 or equivalent
Corequisites: None
Type: LAB
Continuation of HIN 191. Reviews both basic and complex grammatical and pronunciation patterns, and provides intensive vocabulary expansion through a variety of readings as well as conversation and writing practice.

THI 191 Thai First Year—First Semester

Credits: 3
Prerequisites: None
Corequisites: None
Type: LAB
Teaches basic speaking, listening comprehension, reading and writing skills in modern Thai, along with introductory knowledge about the Thai culture. THI 191 is for true beginners, or students whose exposure to Thai is limited.

THI 192 Thai First Year—Second Semester

Credits: 3
Prerequisites: THI 191 or equivalent
Corequisites: None
Type: LAB
Continuation of THI 191. Expands on language skills mastered in THI 191 and THI 19. Reviews both basic and complex grammatical and pronunciation patterns, and provides intensive vocabulary expansion through a variety of readings as well as conversation and writing practice.

THI 193 Thai Second Year—First Semester

Credits: 3
Prerequisites: THI 192 or equivalent
Corequisites: None
Type: LAB
Same as THI 191. Expands on language skills mastered in THI 191 and THI 192. Reviews both basic and complex grammatical and pronunciation patterns, and provides intensive vocabulary expansion through a variety of readings as well as conversation and writing practice.

VIE 191 Vietnamese First Year—First Semester

Credits: 3
Prerequisites: None
Corequisites: None
Type: LAB
Teaches basic speaking, listening comprehension, reading and writing skills in modern Vietnamese, along with introductory knowledge about the Thai culture. VIE 191 is for true beginners, or students whose exposure to Vietnamese is limited.

VIE 192 Vietnamese First Year—Second Semester

Credits: 3
Prerequisites: VIE 191 or equivalent
Corequisites: None
Type: LAB
Same as VIE 191. Expands on language skills mastered in VIE 191 and VIE 192. Reviews both basic and complex grammatical and pronunciation patterns, and provides intensive vocabulary expansion through a variety of readings as well as conversation and writing practice.

GRE 191 Greek (Modern) First Year—First Semester

Credits: 3
Prerequisites: None
Corequisites: None
Type: LAB
Teaches basic speaking, listening comprehension, reading and writing skills in modern Greek. Covers basic grammar and syntax with emphasis on the spoken language. This is a course for true beginners, or students who exposure to Modern Greek is very limited.

GRE 193 Greek (Modern) Second Year—First Semester

Credits: 3
Prerequisites: GRE 192 or equivalent
Corequisites: None
Type: LAB
Continuation of the material covered in GRE 191. This is the second part of the elementary course sequence. The emphasis is still on the spoken language, but it assumes that students have a strong command of the alphabet, know how to read a simple Modern Greek text and have good command of the grammar of nouns and adjectives, and present tense verb conjugations.

UKR 191 Ukrainian First Year—First Semester

Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Teaches basic speaking, listening comprehension, reading, and writing skills in Ukrainian. Gives students a good command of basic grammatical constructions and common expressions used in daily life, along with introductory knowledge of Ukrainian culture. UKR 191 is for true beginners, or students whose exposure to Ukrainian is limited. Course can be modified to meet unique student needs.

UKR 192 Ukrainian First Year—Second Semester

Credits: 3
Prerequisites: UKR 191 or equivalent
Corequisites: None
Type: LAB
Same as UKR 191.

THI 192 First Year—Second Semester Thai

Credits: 3
Prerequisites: None
Corequisites: None
Type: LAB
Continuation of THI 191.

GRE 192 Greek (Modern) First Year—Second Semester

Credits: 3
Prerequisites: GRE 191 or equivalent
Corequisites: None
Type: LAB
Same as GRE 191.

VIE 192 Vietnamese First Year—Second Semester

Credits: 3
Prerequisites: VIE 192 or equivalent
Corequisites: None
Type: LAB
Continuation of VIE 191.

IRI 192 Irish Gaelic First Year—Second Semester

Credits: 3
Prerequisites: IRI 191 or equivalent
Corequisites: None
Type: LAB
Same as IRI 191.

HIN 193 Hindi Second Year—First Semester

Credits: 3
Prerequisites: HIN 192 or equivalent
Corequisites: None
Type: LAB
Expands on language skills mastered in HIN 191 and HIN 192. Reviews both basic and complex grammatical and pronunciation patterns, and provides intensive vocabulary expansion through a variety of readings as well as conversation and writing practice.

IRI 193 Irish Gaelic Second Year—First Semester

Credits: 3
Prerequisites: IRI 192 or equivalent
Corequisites: None
Type: LAB
Expands on language skills mastered in IRI 191 and IRI 192. Reviews both basic and complex grammatical and pronunciation patterns, and provides intensive vocabulary expansion through a variety of readings as well as conversation and writing practice.

UKR 193 Ukrainian Second Year—First Semester

Credits: 3
Prerequisites: UKR 192 or equivalent
Corequisites: None
Type: LAB
Expands on language skills mastered in UKR 191 and UKR 192. Reviews both basic and complex grammatical and pronunciation patterns, and provides intensive vocabulary expansion through a variety of readings as well as conversation and writing practice.

VIE 193 Vietnamese Second Year—First Semester

Credits: 3
Prerequisites: VIE 192 or equivalent
Corequisites: None
Type: LAB
Expands on language skills mastered in VIE 191 and VIE 192.

GRE 193 Greek (Modern) Second Year—First Semester

Credits: 3
Prerequisites: GRE 192 or equivalent
Corequisites: None
Type: LAB
This is an intermediate level course that expands on the language skills mastered in the elementary courses. The course builds on the grammatical elements introduced in GRE 191 and 192; it covers more advanced grammar and provides intensive vocabulary expansion through a variety of readings and conversation. The emphasis shifts a bit more towards writing as opposed to the oral production prevalent in elementary Modern Greek.

UKR 194 Ukrainian Second Year—Second Semester

Credits: 3
Prerequisites: UKR 193 or equivalent
Corequisites: None
Type: LAB
Same as UKR 193.

IRI 194 Irish Gaelic Second Year—Second Semester

Credits: 3
Prerequisites: IRI 193 or equivalent
Corequisites: None
Type: LAB
Same as IRI 193.
HIN 194 Hindi Second Year—Second Semester
Credits: 3
Prerequisites: HIN 193 or equivalent
Corequisites: None
Type: LAB
This is the second part of the intermediate sequence and the course begins where GRE 193 left off. The course provides further practice in the written and spoken language through readings and conversation with emphasis on writing.

ASL 194 American Sign Language Second Year—Second Semester
Credits: 3
Prerequisites: ASL 193 or equivalent
Corequisites: None
Type: LEC
Introduces contemporary Greek culture and society. Taught in English.

GRE 211 Introduction to Modern Greece
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces modern Arabic culture and society. Taught in Arabic and English.

THI 194 Thai Second Year—Second Semester
Credits: 3
Prerequisites: None
Corequisites: None
Type: LAB
Continuation of THI 193.

VIE 194 Vietnamese Second Year—Second Semester
Credits: 3
Prerequisites: None
Corequisites: None
Type: LAB
Continuation of VIE 193.

ARI 201 Arabic Second Year—First Semester
Credits: 4
Prerequisites: ARI 101 or equivalent
Corequisites: None
Type: LEC
Expands on language skills mastered in ARI 101 and ARI 102. Reviews both basic and complex grammatical and pronunciation patterns, and provides intensive vocabulary expansion through a variety of readings, as well as conversation and writing practice.

ARI 202 Arabic Second Year—Second Semester
Credits: 4
Prerequisites: ARI 201 or equivalent
Corequisites: None
Type: LEC
Same as ARI 201.

ASL 211 American Sign Language Deaf Culture in America
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Develops Deaf culture in the U.S. and examines the social characteristics of Deaf culture, identity structures, behavior and norms, values, traditions, and the use of American Sign Language and/or other sign systems. Taught in ASL and spoken English.

GRE 211 Introduction to Modern Greece
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces modern Greek culture and society. Taught in English.

THI 194 Thai Second Year—Second Semester
Credits: 3
Prerequisites: None
Corequisites: None
Type: LAB
Continuation of THI 193.

VIE 194 Vietnamese Second Year—Second Semester
Credits: 3
Prerequisites: None
Corequisites: None
Type: LAB
Continuation of VIE 193.

ARI 201 Arabic Second Year—First Semester
Credits: 4
Prerequisites: ARI 101 or equivalent
Corequisites: None
Type: LEC
Expands on language skills mastered in ARI 101 and ARI 102. Reviews both basic and complex grammatical and pronunciation patterns, and provides intensive vocabulary expansion through a variety of readings, as well as conversation and writing practice.

ARI 202 Arabic Second Year—Second Semester
Credits: 4
Prerequisites: ARI 201 or equivalent
Corequisites: None
Type: LEC
Same as ARI 201.

ASL 211 American Sign Language Deaf Culture in America
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Develops Deaf culture in the U.S. and examines the social characteristics of Deaf culture, identity structures, behavior and norms, values, traditions, and the use of American Sign Language and/or other sign systems. Taught in ASL and spoken English.

GRE 211 Introduction to Modern Greece
Credits: 3
Prerequisites: None
Corequisites: None
Type: LEC
Introduces modern Greek culture and society. Taught in English.

THI 194 Thai Second Year—Second Semester
Credits: 3
Prerequisites: None
Corequisites: None
Type: LAB
Continuation of THI 193.

VIE 194 Vietnamese Second Year—Second Semester
Credits: 3
Prerequisites: None
Corequisites: None
Type: LAB
Continuation of VIE 193.

ARI 201 Arabic Second Year—First Semester
Credits: 4
Prerequisites: ARI 101 or equivalent
Corequisites: None
Type: LEC
Expands on language skills mastered in ARI 101 and ARI 102. Reviews both basic and complex grammatical and pronunciation patterns, and provides intensive vocabulary expansion through a variety of readings, as well as conversation and writing practice.

ARI 202 Arabic Second Year—Second Semester
Credits: 4
Prerequisites: ARI 201 or equivalent
Corequisites: None
Type: LEC
Same as ARI 201.